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COVER FOCUS

Improving Data Center Processes

What can you do to streamline key data center and IT processes? We provide tips in several key areas.

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■ Intel accounts for 80.4% of the worldwide micro-processor market in terms of revenue, according to the latest figures from iSuppli.page 4

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■ According to a study published by ABI Research, small to medium-sized companies are adopting mobile broadband more quickly than large enterprises.page 4

■ Google announced that it is cancelling its search-ad partnership with Yahoo!, which would have allowed Google to sell search ads on Yahoo! search results.page 4

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■ Though its Q1 revenue just slightly topped analysts' predictions, Cisco's second quarter is expected to take a turn for the worse due to a decrease in sales.page 4

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Add New Hardware & Software

How To Improve Your SME's Processes

by Christian Perry

A DELIVERY OF NEW HARDWARE or software might tempt IT managers to begin proudly handing out cigars, but there is generally a long, difficult road ahead for those who aren't prepared to add new products into an existing environment. However, there are tried-and-true methods for streamlining the hardware and software addition process, and once those methods are in place, it's far easier to exude pride over the new arrivals.

Hardware Headaches

According to Dennis Powell, senior product manager, StackSafe (www.stacksafe.com),

Key Points

- Standardization of server builds is critical to ensuring a smooth hardware and software addition process.
- Extensive planning can help to avoid capacity and security problems in the future.
- Ensure that hardware and software is compatible with the current infrastructure.



one of the challenges inherent in adding hardware to a data center environment is hardware expense, because for every dollar spent on IT equipment, three to four dollars must be spent on operating it throughout its lifetime. Another challenge, he says, is hardware compatibility.

"Before implementing new hardware, IT must ensure that it is compatible with existing hardware and capable of supporting the systems for which it will host," Powell says. "For example, does the machine have enough core processing power, does it run

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Handling Unwanted Apps

Managing Employee-Installed Programs Is Not Always Black & White

by Carmi Levy

THANKS TO THE INTERNET, personal computers have never been more personal. Employees can easily download and install a huge variety of software, including games, instant messaging clients, peer-to-peer apps, and third-party utilities such as PDF readers and Flash players. Unfortunately, this ease of customization also exposes the organization to risks such as viruses, Trojans, and worms.

So, IT is in a tough position: Is it better to allow employees to install whatever they wish on their PCs and then live with the additional risk of malware infection or to lock users' computers down and risk compromising productivity?

There are no easy answers, and protecting against this threat while still allowing

employees some flexibility isn't as simple as installing new software. However, with a little bit of compromise and know-how, a solution is within reach.

Education Is Key

As tempting as it sounds to block everything, industry experts say this kind of

"I don't recommend blocking all of the applications from the get-go. That is just a 'quick stop' response, not something that will guarantee long-term success."

- Michelle Warren, president of Toronto-based MW Research & Consulting

drastic response is counterproductive. "I don't recommend blocking all of the applications from the get-go. That is just a 'quick stop' response, not something that will guarantee long-term success," says Michelle Warren, president of Toronto-based MW Research & Consulting. "Start by educating the users. Most don't know that these programs weren't designed for the enterprise. Let them know about the risks [and] what can happen when the net-

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SECURITY

NOVEMBER 7, 2008



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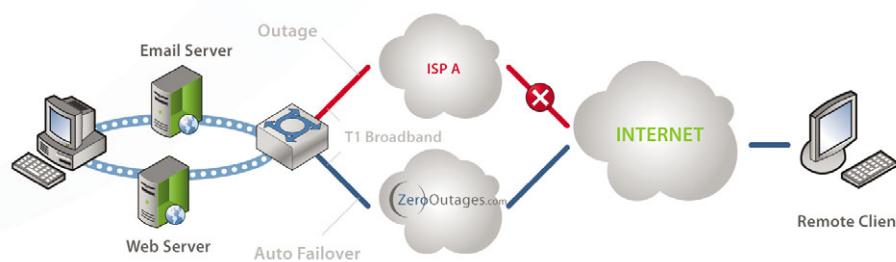
plusID outputs a standard card signal only after its rightful owner matches their live fingerprint to the print securely enrolled and stored on their device. The only installation required is the issuance of a new card number in your existing PACS (physical access control system).

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plusID puts the convenience of biometric processing directly in the hands of its user, eliminating the organization's liability for maintaining and securing biometric databases.

NETWORKING & VPN

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PHYSICAL INFRASTRUCTURE

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Quantity*	Plug Type	Input AMPS	Input VOLTS
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5-15P	15	125	
5-20P	20	125	
LS-20P	20	125	
6-20P	20	250	
LS-20P	20	250	
LS-20P	20	125/250	
L1-L2-20P	20	125/250	
L1-L2-20P	20	125/250 WYE	
LS-30P	30	125	
LS-30P	30	250	
LS-30P	30	125/250	
LS-30P	30	125/250	
IEC Pin & Sleeve	20 ^{**}	250/250 ^{**}	
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IEC Pin & Sleeve	30 ^{**}	250/250 ^{**}	
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Geist power management products include 15- to 120-amp PDUs and other power-related products that can be customized to fit your specific needs using the Product Definition Form pictured above.

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Calls to Geist are answered by a live person. Without delay, you are directed to your personal customer service representative, and the person you speak to today is the same person that you will work with every time you call. Your CSR will walk you through our Product Definition Form and submit your configuration for quote. Typically you will receive your custom project quote from Geist before other competitors can even agree on the product definition.

Design for success. Geist's in-house engineering department includes a group of

mechanical, electrical, board layout, and software specialists whose sole responsibility is to design custom products. From concept to prototype delivery, this team reduces your custom development time from months to weeks.

Custom is just part of the regular flow. Whether the project is standard or custom, all Geist products are built to order and made in the United States. Versatile work centers and highly trained personnel give manufacturing the ability to react immediately to any customization project, without affecting the regular production routine. Geist utilizes lean manufacturing to evolve from a mind set of mass production to one of mass customization.

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Continuous improvement. Geist recently launched a new metal works division. This new operation includes fabricating and powder-coating equipment, enabling Geist to streamline chassis production as an internal function. The new metal works capabilities will further enhance Geist's rapid production response by minimizing restrictions due to suppliers' schedules.

Geist has established a 60-year reputation for providing personalized customer service, hassle-free product design, and fast-turn production for power and monitoring solutions.



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Wipro Delays Opening Of Atlanta Software Development Center

Wipro, an India-based seller of offshore outsourcing services, has announced it will delay the opening of a software development center it had planned in Atlanta due to the global economy's downward turn. Wipro had planned to house more than 500 employees within three years of opening the Atlanta center, which the company developed in part to provide operations closer to its U.S. customers. Wipro says it isn't abandoning plans for the Atlanta center but will wait out the fiscal downturn. "As the Atlanta center is a new initiative, it is taking more time to draw customers' attention due to uncertainty in the environment," says a Wipro spokesman. "We are not shying away from what we plan to do in Atlanta, but it is taking more time than expected given this scenario." Three additional U.S. centers outside Atlanta were to follow the Atlanta launch.

Labor Department Awards \$1.7 Million In H-1B Visa Settlement

The U.S. Department of Labor has announced that GlobalCynex, a Sterling, Va., IT company, must pay about \$1.7 million to 343 of its workers, all holding H-1B visas. The ruling, one of the largest connected to the controversial H-1B program, stems from charges that GlobalCynex did not pay the employees required wages over a two-year period from March 2005 to March 2007. Additionally, the Labor Department ruled GlobalCynex broke the law by charging workers \$1,000 and \$2,500 training fees. When all is said and done, each of the 343 employees could stand to receive about \$5,000. The visa program, which was designed to let companies hire foreign workers deemed highly skilled in fields with a shortage of U.S. candidates, has been under heat in recent years: The ruling comes on the heels of a USCIS (U.S. Citizenship and Immigration Services) report released in October criticizing the H-1B visa program. In the report, made public by U.S. Sen. Chuck Grassley (R-Iowa), the USCIS discovered that about 21% of the 246 H-1B applications the USCIS randomly reviewed contained fraud or technical violations.

Avaya Names New President & CEO

Kevin Kennedy, current CEO of JDS Uniphase, will become the new president and CEO of



Avaya, replacing Louis D'Ambrosio, who resigned in June citing medical reasons. Kennedy, who has also worked at Openwave Systems, Cisco, and AT&T Bell Laboratories, will start his new position in January. Charles Giancarlo, who has served as acting president and CEO since D'Ambrosio's departure, will

become chairman of the board. "Kevin Kennedy brings to Avaya a deep understanding of the enterprise communications industry," Giancarlo says. "He will join Avaya at a time when we are strongly positioned in our industry."

Yahoo!, Google Join Privacy Advocacy Group

Yahoo!, Google, Microsoft, and several other companies in the United States and abroad have joined forces to protect and advance the human rights of freedom of expression and privacy. The group, dubbed the Global Network Initiative, provides a series of guidelines for companies to follow to assess human rights risks, challenge violations to those rights, and provide whistle-blowing mechanisms. "The participants recognize that responsible company actions alone cannot guarantee that human rights are not violated," according to a statement. Initiative members will work together to promote laws and policies that "protect and respect freedom of expression and privacy."

Intel Gains Processor Share

Intel accounts for 80.4% of the worldwide microprocessor market in terms of revenue, according to the latest figures from iSuppli. That's up almost 2% from Intel's year-ago figure of 78.7% and up 0.3% from the 80.1% share it had in the second quarter. Rival AMD's 12.1% share of worldwide microprocessor revenue was up 0.1% from the second quarter but down about 2% from the 13.9% share it had a year ago. Much of Intel and AMD's growth during the quarter came at the expense of smaller manufacturers, according to iSuppli, with Intel's growth largely attributed to the company's strength in the notebook segment.

FCC Approves Verizon/Alltel Merger ...

The FCC (Federal Communications Commission) paved the way for Verizon Wireless to become the largest mobile phone service provider in the United States when it approved Verizon Wireless' \$28.1 billion purchase of Alltel. Chairman Kevin Martin and Republican commissioners Deborah Taylor Tate and Robert McDowell, along with Democratic commissioners Michael Copps and Jonathan Adelstein, voted in favor of the merger, though Copps and Adelstein asked that more measures be put in place to guarantee existing roaming contracts for a lengthy period. Verizon Communications' CEO Ivan Seidenberg assured Verizon stockholders, concerned about how the company could afford the acquisition given the current economic situation, that the investment is a sound one.

... But DoJ Requires Some Stipulations

In the negotiations for merger approval between Verizon Wireless and Alltel, the Department of Justice has laid down a few requirements that must be satisfied before the deal can close. The

Antitrust Division of the DoJ, along with seven state attorneys general, filed a civil suit to block the deal unless Verizon divests itself of certain assets. As part of a proposed settlement to safeguard prices and quality via competition, Verizon will have to sell off assets in 100 cellular marketing areas in 22 states.

Study: SMEs Driving Mobile Broadband Adoption

According to a study published by ABI Research, small to medium-sized companies are adopting mobile broadband more quickly than large enterprises. One of the key drivers to this adoption is the familiarity with data access from PCs and laptops, which mobile broadband makes easier while on the road. The study also



found that part of the reason for SMEs' faster adoption is because there is no "distribution favoritism" toward business customers; simply put, a small-business owner can buy mobile broadband devices and services directly from retail and electronics outlets. ABI also notes that although the mobile broadband market is still in its infancy, it is expected to continue to grow.

Microsoft Reports Increase In Malware

In its biannual Security Intelligence Report, Microsoft says that although the security in Windows OSes has significantly improved, the threats of viruses and fraud have also increased. Microsoft points to organized cyber crime and naïve users as the cause for the worsening situation. The company also reported that in the first half of this year, the amount of malicious software removed from Windows computers grew 43% and that hackers have stopped targeting OSes and instead are turning to security holes in individual programs. The security report claims consumers are safer running Windows Vista than any other Microsoft OS. Microsoft has a unique capacity to comment on malware-related issues because it receives automated data from the free software it offers users, such as the Malicious Software Removal Tool, and also because users on more than half a billion personal computers send an error report when their computers experience problems.

Google Cancels Deal With Yahoo!

Google announced that it is cancelling its search-ad partnership with Yahoo!, which would have allowed Google to sell search ads on Yahoo! search results. Google's decision came after the Department of Justice indicated that it would block the agreement; the company felt that moving forward with the agreement would risk legal battles and jeopardize its relationship with several valued partners. Yahoo!, disappointed by the decision, now faces a struggle, as it had expected to generate \$800 million in revenue and \$250 million to \$450 million in operating cash flow within the first 12 months of operation.

3,000 Layoffs At Motorola

Some 3,000 Motorola employees will lose their jobs in 2009, according to the company. More than two-thirds of the global layoffs will come from the handset division, which is struggling to compete against Apple's iPhone, Google's Android platform, and other popular mobile phones. The job cuts are part of a targeted \$800 million in budget cuts the troubled company hopes to realize in order to demonstrate to shareholders that it is on the road back to profitability. The 3,000 layoffs will affect roughly 4.5% of Motorola's workforce worldwide and will come from all areas of the company.

Upcoming IT Events

Are you looking to learn more about data center or IT topics? Network with some of your peers? Consider joining a group of data center professionals. If you don't see a meeting listed in your area, visit www.afcom.com, www.aip.org, or www.issa.org to find a chapter near you.

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Greater Tampa Bay AFCOM Chapter
Nov. 19, 12:30 p.m.
Baycare
5701 E. Hillsborough Ave.
Tampa, Fla.

• • • •
ISSA Baltimore
Nov. 19, 4:30 p.m.
Sparta Inc.
7110 Samuel Morse Drive, Suite 200
Columbia, Md.
www.issa-balt.org

• • • •
ISSA Fort Worth
Nov. 19, 11:30 a.m.
The City of Fort Worth Building
275 W. 13th Street
Fort Worth, Texas
www.issa-cowtown.org

• • • •
ITEC Philadelphia
Nov. 19-20
Philadelphia, Pa.
www.goitec.com

• • • •
AITP Omaha
Nov. 20, 5:30 p.m.
Seraph Corp.
Omaha, Neb.
www.aitpomaha.org

• • • •
ISSA Puget Sound
Nov. 20, 5:30 p.m.
Olympic Room, Microsoft
Main Campus Building 27
3009 157th Place NE
Redmond, Wash.
www.issa-ps.org

• • • •
Security 2008
Nov. 20-21
Washington, D.C.
events.fcw.com

• • • •
AITP Wichita (The Air Capital)
Nov. 20
Petroleum Club
100 N. Broadway
Wichita, Kan.
www.aitpwichita.org/index.htm

• • • •
AITP Akron
Nov. 25
Lindsay's Amber Restaurant
1500 Canton Road
Akron, Ohio
www.akron-aitp.org

• • • •
- DECEMBER -
Gartner 27th Annual Data Center Conference
Dec. 2-5
Las Vegas, Nev.
www.gartner.com/it/page.jsp?id=627607

• • • •
ITEC New Jersey
Dec. 3-4
Secaucus, N.J.
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• • • •
AFCOM Central Texas
Dec. 4, 11:30 a.m.
Marie Callender's Restaurant
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Austin, Texas

• • • •
ISSA Central Plains
Dec. 5, 1 p.m.
SKT Business Communications Solutions
3rd Floor
125 N. Emporia, Suite 100
Wichita, Kan.
www.issa-cp.org

• • • •
Computer Measurement Group '08
Dec. 7-12
Las Vegas, Nev.
www.cmg.org/conference

WATCH THE STOCKS

This information provides a quick glimpse of current and historical stock prices and trends for 14 major companies in the technology market.

Company	Symbol	Year Ago	Oct. 31 \$	Nov. 7 \$	% change from previous week
AMD	AMD	\$13.08	\$3.50	\$3.16	▼ 9.71%
Computer Associates	CA	\$26.53	\$17.80	\$16.89	▼ 5.11%
Cisco Systems	CSCO	\$32.75	\$17.77	\$17.58	▼ 1.07%
Dell	DELL	\$29.31	\$12.20	\$12.55	▲ 2.87%
Google	GOOG	\$732.94	\$359.36	\$331.14	▼ 7.85%
HP	HPQ	\$51.84	\$38.28	\$34.64	▼ 9.51%
IBM	IBM	\$111.08	\$92.97	\$86.27	▼ 7.21%
Intel	INTC	\$26.90	\$16.03	\$14.63	▼ 8.73%
McAfee	MFE	\$38.21	\$32.55	\$30.56	▼ 6.11%
Microsoft	MSFT	\$35.52	\$22.33	\$21.50	▼ 3.72%
Oracle	ORCL	\$22.10	\$18.29	\$17.53	▼ 4.16%
Red Hat Software	RHT	\$22.11	\$13.31	\$12.82	▼ 3.68%
Sun Microsystems	JAVA	\$5.22	\$4.65	\$4.20	▼ 9.68%
Symantec	SYMC	\$17.29	\$12.58	\$13.20	▲ 4.93%

NOTE: This information is meant for reference only and should not be used as a basis for buy/sell decisions.

Improve Web Server Performance

AppBeat DC Adds Speed & Efficiency To Pronto.com's Network

by Sue Hildreth

• • •

WHEN TONY CASSON, director of operations for ecommerce site Pronto.com, began expanding the company's network in late 2007, he decided to purchase extra load-balancing equipment to help improve the performance of the company's Web servers.

Pronto.com had been growing rapidly over the past three years, and its IT infrastructure had been expanding at a rapid pace, as well. That meant, however, that equipment was often added hastily without following any architectural plan.

"Our network was wired together in spaghetti fashion, and the concept of network architecture was foreign to us," Casson says, noting that it's a common scenario in fast-growth firms such as Pronto.com.

The company had decided to standardize its infrastructure and, at the same time, move its Web farm from a Denver facility to a colocation center in Virginia. Adding more load balancers was part of that larger plan.

Accelerate Response Times

After evaluating several load-balancing products, Casson and the Pronto.com IT team decided to invest in a product that had more than standard load balancers. The product they selected, AppBeat DC from Crescendo Networks (www.crescendonetworks.com), accelerates Web application response times by offloading process-intensive tasks from the servers onto its own hardware chips. The AppBeat DC's functions include load balancing, server-side TCP acceleration, SSL offloading, and DDoS protection.

"At the time, we did not know that we needed this technology, but now that we've deployed it to our network, we've reaped great benefits," says Casson. "It adds a lot of speed and efficiency to our computers."

The speed and efficiency of its network is critical to Pronto.com, which relies on its servers (12 Web servers, 20 supporting application servers, and a dozen back-office servers) to support 15 million users each month who use the site to do comparison shopping of products, create personal profiles for social networking, and create lists of favorite products to share with other

members. Obviously, these members expect Pronto.com's Web site to respond quickly; otherwise they may eventually drift away to another product comparison site.

As Casson was planning for the move to the Virginia facility, he contemplated what was necessary for such a move. Migrating the network without having to bring down servers would typically require the purchase of all new hardware so a company could switch traffic from the old network to the new network without waiting for IT staff to pack up and move the servers. But equipping a data center with all new hardware is expensive. Casson, however, determined he could use AppBeat DC to cut his hardware costs.

AppBeat DC's ability to offload processing chores onto its own chips enabled Casson to use fewer servers to handle the existing flow of customer traffic on Pronto.com's Web servers. Casson calculated that, using AppBeat DC, he would need only six Web servers to handle the Web traffic shouldered by a dozen servers at the Colorado center. He planned to have those six new servers support all of the traffic temporarily until he could ship some of the older ones from Denver.

Extensive testing showed the plan would work. So IT personnel set up the new Virginia center and, at midnight on July 7, staff pointed the DNS server to the Virginia Web servers, which took over the load without any problem, says Casson.

"It was a little scary [redirecting traffic to Virginia] because all we had was a skeleton batch of servers in Denver and New York to handle any emergency. But thankfully, it passed all tests with flying colors," he says.

Casson then backed up six of the old Denver servers and shipped them to Virginia to reduce the load on each server from 100% to 50%. The move took about three months.

Performance-Boosting Features & A Nice UI

AppBeat DC uses Crescendo Networks' SLT (Short-Lived Transaction) technology in combination with zero-latency compression and server-normalization techniques to speed up end-user response times. The company claims improvements of 30 to 70%. The app also consolidates and offloads key functions

(such as SSL and TCP processing and bulk data encryption) that would otherwise slow down the main processor. The product has its own dedicated hardware and runs each function on a separate CPU.

Crescendo Networks claims AppBeat DC can compress content by as much as 85%, at speeds up to 3Gbps, with zero latency.

The impetus to go with AppBeat DC rather than a regular load balancer, as Casson had originally planned, was AppBeat DC's combination of acceleration and compression



features, plus above-average performance as a load balancer.

"It outperformed the load-balancing platform we were using at the time, with more transactions per second, and it had advanced feature sets—TCP offload, SSL compression offload, those sorts of things. When we did a bakeoff, they won hands down. We also really appreciated the next-generation interface, which was far more intuitive."

AppBeat DC's easy-to-use interface also helped tip the scale in its favor. Although it offers a command-line interface, AppBeat DC's graphical interface appealed to Casson. He notes that, although his IT staff initially preferred an old-fashioned command-line interface, the staff quickly took to the AppBeat graphical interface and is now using it more often than the command line.

"We can do about 80% of what we need in the UI and 20% through command line, which is the reverse of how we worked before," Casson says.

Another benefit of AppBeat DC, according to Casson, is that it improves the performance and capacity of the Web servers, which not only reduces the amount of new equipment he has to purchase in the future, but also will make routine maintenance easier.

"Doing maintenance prior to deploying AppBeat was trickier. We had to rotate a server or two out at a time and coordinate it really artfully," he says. "With AppBeat, fewer servers can handle more traffic, which allows me to take more servers out at a time to do maintenance. So, it requires far less time and money."

Casson estimates AppBeat has increased Pronto.com's server efficiency by 150% and slowed hardware expansion by 50%. "As we grow, that will have a tremendous impact," he adds.

Calculating user response time is harder, due to the different activities available to Pronto.com users. For instance, a query that used to take 1.5 seconds to load now loads in one second, Casson estimates, which is an improvement in overall response time by 25% to 50%.

Next Step: Global Load Balancing

Down the road, Casson would like to develop a geographically distributed network. "The next step we're reviewing is going to a globally load-balanced environment, which would give us more production nodes, geographically distributed, with another AppBeat device communicating with its partner at a different node. Two AppBeats communicating from distributed locations could compare notes as to which node is getting more traffic and load balance between the two," he explains.

For now, however, Casson is pleased that the move to Virginia went smoothly and the network is handling traffic more efficiently.

"With AppBeat, in addition to other efficiencies and tweaks that our engineers have added, we saw a direct increase in the amount of leads we were generating for our participating merchants. So, our site has been faster and more available, and we've been able to deliver more quality leads for our business." □

Crescendo Networks AppBeat DC

Provides availability, scalability, acceleration, and optimization features for Web applications. The product offloads CPU-intensive tasks from servers and accelerates the delivery of Web content to the user. AppBeat DC's feature set includes load balancing, server-side TCP offload, SSL offload and acceleration, HTTP compression, client-side TCP acceleration, and DDoS protection. The solution also supports non-HTTP applications for load balancing and TCP optimization.

"It outperformed the load-balancing platform we were using at the time, with more transactions per second, and it had advanced feature sets—TCP offload, SSL compression offload, those sorts of things. When we did a bakeoff, they won hands down," says Tony Casson, director of operations at Pronto.com

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STORAGE

NOVEMBER 7, 2008

CMS Products' Encrypted Hard Drives Provide New Levels Of Data Integrity

CMS Products ABS-Secure Notebook Backup Solution

The ABS-Secure is the latest in the CMS Products line of external USB 2.0-encrypted disk solutions, with capacities starting at 80GB. The unit utilizes CMS Products' CE-Secure Full Disk Encryption software for complete management of the encryption environment. Weighing only seven ounces, the ABS-Secure is bus-powered for transportability and is ultrarugged with the inclusion of the CMS DataGuard shock-absorbing wrapper.

The ABS-Secure is ready to use right out of the box. As the entire disk is pro-

tected with AES 256-bit encryption, users can be confident that all data on the ABS-Secure is safe and can be accessed only by its rightful owner.

The ABS-Secure includes CMS Products' BounceBack Express Version 8.0 backup and restore software. Recently released, Express 8.0 is the successor to the earlier award-winning BounceBack software. Sporting a new, straightforward, and intuitive interface, Express 8.0 is the perfect complement for imple-

menting data backup to the encrypted ABS-Secure.

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Reduce Windows Configuration Complexity New Boundary Technologies Prism Suite 9.0

Every Windows administrator is looking for new ways to make Windows configuration more manageable and efficient. All too often, however, the tools and programs designed to simplify the Windows configuration process only add complexity and headaches.

New Boundary Technologies' Prism Suite 9.0 helps reduce the complications associated with Windows configuration. New Windows configuration management features allow for se-

cure, Internet-based administration of mobile workforces and remote locations, resulting in better functionality and performance. In addition, Prism Suite 9.0 has been designed to spread out the deployment of software and configuration responsibilities to enhance performance and conserve bandwidth.

Prism Suite 9.0 also offers a client/server architecture and modular design to automate and simplify processes inside IT departments or via

a managed service provider or software as a service models.

Corporate IT departments will benefit from the inclusion of effective, dependable packaging of 64-bit software programs, allowing large, 64-bit software programs to be deployed faster. Prism Suite 9.0 also includes added support for WMI (Windows Management Instrumentation), so Windows administrators can be more accommodating when grouping systems for management tasks.

Enclosed Server Rack For Noise Reduction GizMac XRackPro2

Noise from computer equipment is on the rise. As the manufacturers of computer equipment try to squeeze more computing power into less space, heat increases, while fan size often shrinks. With more heat and smaller fans, computer equipment becomes louder and more irritating from the faster spinning, high-pitched fans.

GizMac XRackPro2 is the solution for noise produced from rackmount equipment. The XRackPro2 enclosed server rack can reduce computer equipment

noise up to 80%. Based on an industry-standard four-post rack and a deep rail-to-rail distance, the XRackPro2 can accommodate most types of rackmount equipment and will help create a more productive workplace by removing distracting noise.

Loud rackmount computer servers, RAID systems, switches, and other equipment become much quieter inside the XRackPro2. This acoustically engineered rack uses multiple sound reduction methods to reduce the noise levels.

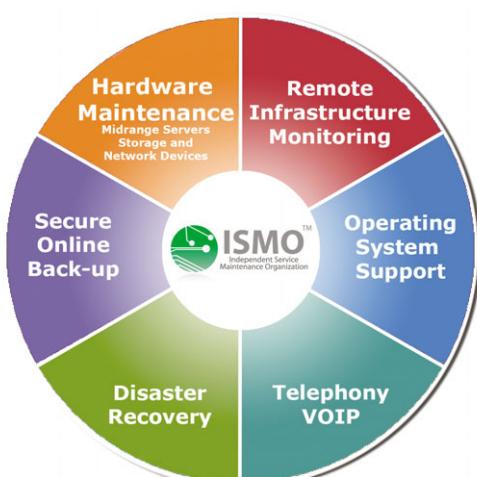
The significant reduction in noise of the equipment inside the XRackPro2 allows people to work near loud computer systems without distraction.

In addition to reducing noise, the XRackPro2 filters the incoming air, provides key-lockable doors, and allows for mobility. Air filters, locking doors, and wheel options are available on all models. These additional features provide benefits that make the XRackPro2 an even greater value in the fight to reduce computer equipment noise.



GizMac XRackPro2 rackmount cabinets reduce noise and are ideal for Apple, Linux, SGI, Sun, Windows, and other PC servers.
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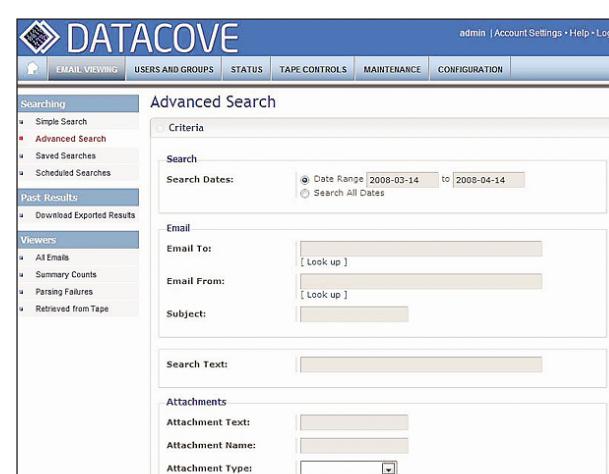
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Capture & Index All Email & Attachments

Tangent DataCove Hosted Service

Because of recent regulations such as Sarbanes-Oxley, HIPAA, and federal and state e-discovery rules for civil procedures, enterprises need to be able to store, search, and retrieve emails for as long as seven years. Secure storage and quick retrieval are essential.

The hosted version of Tangent's DataCove email archival solution solves the problem by capturing and indexing all email, attached files, PST, and digital faxes. The ESI (electronically stored information) is sent to a central repository located at the Tangent facilities. The repository is equipped with fault-tolerant, redundant, and secure servers to ensure uninterrupted service.

DataCove SaaS email archiving offers a fully searchable database with intuitive menus for easy use and retrieval. Like DataCove's appliance, the hosted service archives email from

email servers such as Microsoft Exchange, Lotus Notes, Novell GroupWise, Sendmail, Imail, and all standard message transfer agents utilizing POP3, IMAP, and SMTP protocols.

Features include:

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- Management and access via Web-based GUI and Outlook connector
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- Advanced, Web-based, and scheduled search options
- Reliable, long-term storage including automatic archive to AIT WORM tape
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- 256-bit AES encryption



CLIENTS

OCTOBER 31, 2008



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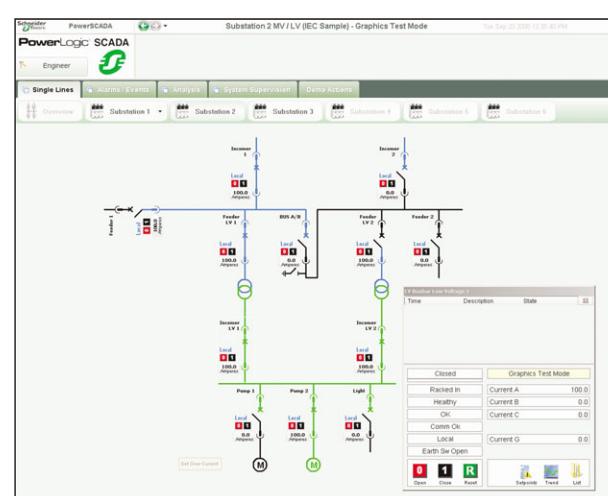
cluding Arabic, Chinese, German, Hebrew, Japanese, and Russian, DocuMatrix has advanced multilanguage capabilities that are fully integrated with all review accelerators.

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PHYSICAL INFRASTRUCTURE

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PowerLogic SCADA 7.1 is powered by Citect SCADA (Supervisory Control And Data Acquisition) technology but has been specifically designed for electrical power system applications. The PowerLogic SCADA solution includes a graphical user interface, enhanced alarm management, one-second response times for control operation and status, transparent redundancy, and reliable communications through hardware components and network topology. The system also features SER (sequence of events recorder) logs with time stamps of 1ms resolution.

PowerLogic SCADA 7.1 software includes a Web-based client for remote viewing capability. The graphical user interface consists of animated objects that change according to status information. The flexible graphics editor includes both ANSI and IEC electrical symbols to facilitate easy one-line diagram creation. Real-time and historical trending is also supported.

Intended for customers with critical applications such as data centers, hospitals, and continuous process plants, the PowerLogic SCADA system enables higher efficiency for operators in normal or critical situations by providing instant data intelligence for power distribution.



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STORAGE

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Open-E DSS offers enterprise-class functionality and reliability, enhanced manageability, and increased productivity for applications such as file sharing, storage consolidation, backup and recovery, virtualization, and disaster recovery.

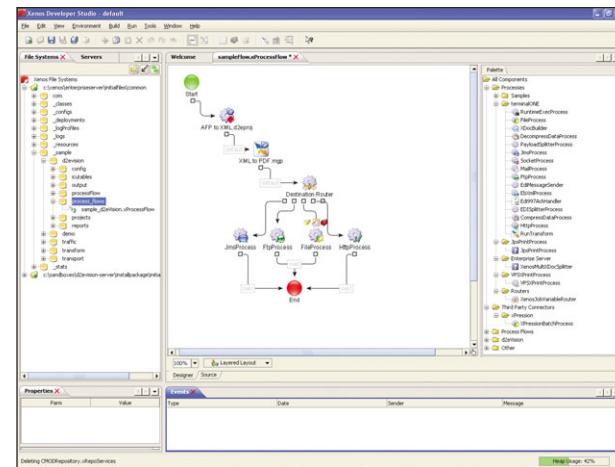
Open-E DSS is built on Open-E's NAS/SAN software technology, which is noted for its performance, superior security, robust operation, and ease of use.

With Open-E DSS, users can cost-effectively and quickly add storage to an existing network, consolidate storage and backups for multiple servers, centralize storage management with optimal performance and data protection, and improve data availability and efficiency. Additionally, Open-E DSS is a full, independent OS and does not require the installation of Linux, Windows, or any other OS and can be up and running in minutes.

Enhanced features include automatic failover, enabling the Open-E DSS server to switch from a primary storage server to a secondary one if the primary server fails or to simplify scheduled maintenance. Open-E DSS provides all these features at a fraction of the cost of alternatives.

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NETWORKING & VPN



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Xenos Enterprise Server is a server-based infrastructure solution designed to give complete organizational control over data and document transformation from a central location. The software is designed to be flexible and easily integrates into a company's existing information supply chains. This gives companies better efficiency, enhances business

processes, and reduces compliance management risks. Migrating legacy documents and image archives, facilitated by Xenos Enterprise Server, can help reduce license, maintenance, and training and support costs.

The Xenos ES is built on J2EE architecture, which is fault-tolerant and server-based, with the ability to quickly process millions of transactions. Other features of the architecture include job scheduling, load balancing, clustering, monitoring, failover, notification, and error handling. The software is highly scalable and component-based, supporting the extraction, transformation, and repurposing of data in the enterprise, effectively granting companies access to the business-critical content necessary for Content-Enabled Vertical Applications.



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Updating Enterprise PCs

How To Update Systems Without The Headache

by David Geer

UPDATING ENTERPRISE PCs is never so simple as setting the Automatic Updates feature and then walking away. SMEs have to take their software in hand, standardize, control user installations, and manage their own automated update processes with the proper tools. And that's only the tip of the life cycle iceberg.

Pain Points

Users may be the biggest update pain point when permitted to install their own rogue software. User reliance on these programs forces IT to support them with all their headaches, including updates. This makes more work for IT.

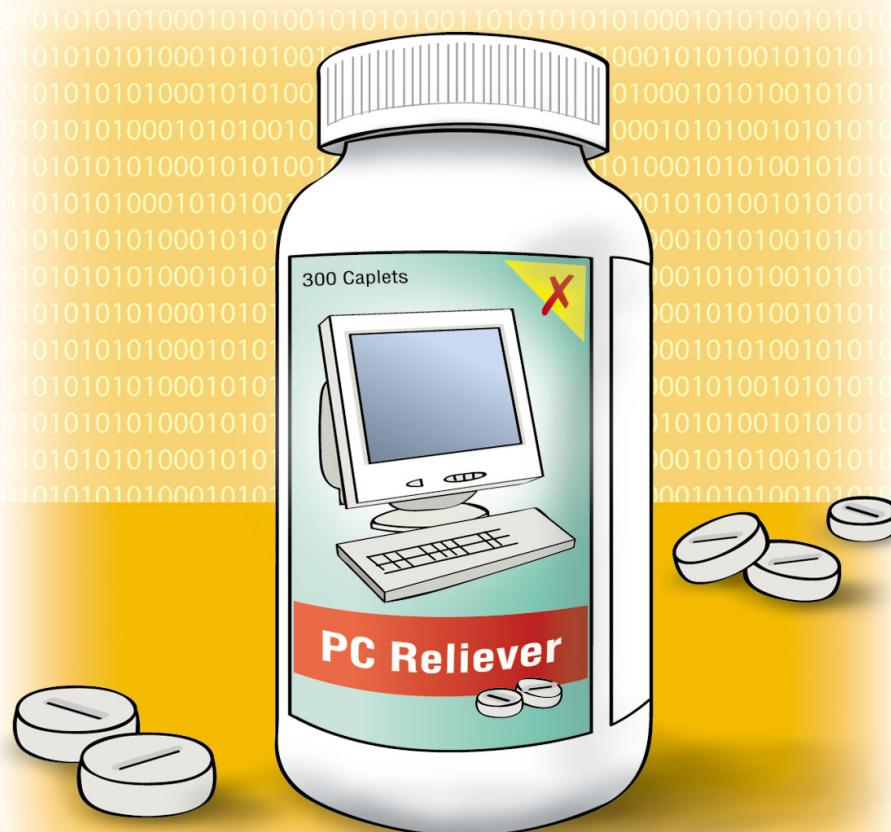
To cut back on that workload, IT tends toward automation. It uses automatic updates to update the software. "The downside to that is that the vendor is handling

Tools To Ease The Pain

Enterprises ease the update process by standardizing on specific software and disallowing other programs. "IT eliminates unnecessary applications so they won't have to patch them," says Ronnie Parisella, CTO, Primary Support Home (www.primariesupporthome.com). The software for a digital music player is a good example of unnecessary software. By setting policies and locking down systems, SMEs prevent rogue software and control the update process.

Standardization approves specific software that IT staff must know, support, and update, eliminating the stress of familiarizing themselves with other programs. Once a software standard is set, SMEs should automate the provisioning process by creating desktop images complete with OSes and applications, explains Girish Mathrubootham, vice president, ManageEngine at AdventNet (manageengine.adventnet.com).

When updating entire OSes, IT can push an image to the desktop. In this way, the



your updates. If something goes wrong, you have to backtrack to see which update caused the issue," says Jeff Riechers, sales engineer at Clifton Gunderson Technology Solutions (www.cliftontechnology.com).

To troubleshoot faulty updates, IT has traditionally had to manually uninstall them one at a time until it discovered the one causing the trouble. "Then, you have to work with your software vendor to find fixes for the issue that the fix created," Riechers says.

Perhaps most importantly, updates may create changes to software that shares dependencies with other programs. As a result, a simple update may cause an important application to quit working.

Key Points

- Standardize on a limited number of OSes, applications, and hardware to keep the update process predictable and familiar.
- Automate the process with drive images and patch management tools.
- Monitor hardware remotely to determine when to upgrade.

enterprise avoids the tedium of manually installing software from individual media by sending entire images to multiple computers across the network from a central location.

Automation also helps to update PCs with the countless individual software patches that appear on a daily basis. "There are so many patches coming out that it's impossible for IT to keep up with the volume. The process must be automated," says Mathrubootham. Thankfully, there are tools for that.

Patch management software gives enterprises control over updates and fixes. "[Patch management software] enables SMEs to download one copy of the patch for all PCs, test deploy that patch to a single machine or a limited grouping, and remove patches that don't work out, all in an automated fashion," says Riechers.

To get the most out of patch management tools, SMEs should establish patch management policies and procedures, a test environment for first deployment of new patches, and a quick recovery mechanism for restoring PCs to their last known good state, Riechers explains.

Set up redundant copies of PCs running outside the normal production environment. Apply the patches here first. If they disrupt

BIGGEST IMPROVEMENT

Without change management, unauthorized changes, including updates and fixes, may bring costly damage to systems. An IT manager always understands that an unauthorized change has the potential to cost more than a security hole, insists Girish Mathrubootham, vice president, ManageEngine at AdventNet (manageengine.adventnet.com). "Tools are available that include change management for SMEs for a few thousand dollars, and you don't need separate staff to use them," says Mathrubootham.

normal operation, don't deploy them to production. Prepare a recovery mechanism consisting of documented procedures used to safely uninstall new patches and restore critical data to machines when necessary.

Use tools that enable the enterprise to track updates, warranties, inventory data, and the role of that desktop (some are set up for customer service, others for Web development, graphics, or other applications). This information helps determine which PCs may need which updates or images and when. Good patch-management software also enables the enterprise to do system reporting, providing alerts around errors at different points in the update process.

Hardware Updates

IT rarely updates PC hardware these days because most PCs are commodity items. IT often replaces the whole unit with the latest, greatest model. Exceptions include RAM and peripherals. Standardization is again the key. "When every workstation is configured in the same way, with the same hardware and peripherals, SMEs only have to order one make and model part for each computer they have," says Parisella.

Patch management software offers monitoring tools that monitor available hardware resources, such as RAM, so IT knows when additional RAM will help PC performance, Riechers notes.

Standardization on a single platform isn't always possible. Where multiple platforms and operating systems are used, SMEs should consider life cycle management tools, which may also include patch man-

Enterprises ease the update process by standardizing on specific software and disallowing other programs.

agement and cross-platform support, according to Mathrubootham.

In the big picture, neither updates nor any other change should occur apart from change management. Technicians can't simply make changes because they want to. They have to put in change request forms, explains Mathrubootham. Then someone looks at the dependencies between applications and processes and determines whether the change is a good idea. If an update will negatively affect a business process, IT may deny the update.

Tools, policies, controls, standardization, and automation aren't the half of it. What intuitively seems so simple is rooted in a load of careful planning and forethought. Take a step back, look at the big picture, and start from there. □

Microsoft Targets Pirates Globally

Microsoft recently launched an all-out assault on software piracy with its Global Anti-Piracy Day. The broad-reaching initiative entails working with law enforcement organizations to prosecute software pirates and collaborating with communities to raise awareness about the pitfalls of piracy for businesses and consumers.

This year's event signals a more aggressive posture for Microsoft on piracy, but the firm stops short of targeting individuals who, knowingly or unknowingly, obtain pirated software. Instead, Microsoft is seeking to prosecute those who profit from piracy. The company announced that it was rooting out pirates by filing 20 civil lawsuits in federal courts in Florida, California, New York, Texas, and four other states.

Microsoft's antipiracy campaign is also having consequences for pirates abroad. Microsoft called on the Attorney General and the police to settle 33 pirating operations in



Colombia. Microsoft France recently filed civil cases against pirates who had sold an estimated \$1.2 million worth of pirated software. In China, Microsoft aided Chinese law enforcement in 25 raids against software pirates. In all, Microsoft is taking action in 49 countries on six continents.

Raising Awareness

But Microsoft is out to win hearts and minds, too. According to the BSA (Business Software Alliance), 38% of all software installed globally is unlicensed. David Finn, Microsoft's associate general counsel for worldwide antipiracy and anticounterfeiting, says that Global Anti-Piracy Day succeeded in "raising awareness around the world of the risks associated with counterfeit software."

Finn spent time in Southeast Asia meeting with software vendors and local governments to talk about the benefits of genuine software and the hazards of counterfeit software. Microsoft's public relations battle consists of intellectual property awareness campaigns, engagements with partner businesses, educational forums, and law enforcement training in global piracy hotspots.

Regarding individuals who own and/or use counterfeit copies of Microsoft's software, Microsoft still relies on its established Windows Genuine Advantage campaign, which enforces software authenticity through online verification. Users attempting to access Microsoft services, such as Windows Update, will only be allowed to proceed if their software checks out. In the event that a user's software is suspected of being counterfeit, Genuine Advantage presents the user with information on how to obtain a valid copy.

Jenny Blank, senior director of legal affairs for the BSA, praised Global Anti-Piracy Day, saying, "All efforts that help raise awareness about the dangers of software piracy and educate end users . . . are commendable."

Add New Hardware & Software

Continued from Page 1

over Ethernet, does it support a needed capability like virtualization, and so on."

IT managers must also determine how to match hardware to energy capacity, Powell says. "Anticipate that the cost to power your hardware will more than double the cost of the actual machine. Everyone is paying very close attention to the overall energy usage of electrical and building systems, and many data centers today are expected to comply with government- and industry-imposed energy regulations," he says.

The hardware addition challenges don't end there. Others, Powell says, are finding sufficient floor space to allow hardware to be cooled properly; ensuring that the physical location supports efficient network connectivity; fitting new hardware into a business continuity or disaster recovery plan;

"Anticipate that the cost to power your hardware will more than double the cost of the actual machine."

- StackSafe's Dennis Powell

ensuring that new hardware complies with regulations and standards; and ensuring the new hardware will scale over time to support higher workloads and more processing power, storage, or memory required by its hosted applications.

James Bond, director of engineering, Apptix (www.apptix.com), adds that another key challenge is hardware consistency, or using the same brand and style of hardware throughout the data center. "This makes it easier for support purposes and maintenance, but it can be extremely tough for IT managers, as brand and model numbers can be phased out by manufacturers, and budgets may constrain their choice, as well," Bond says.

a part of the install, run, and maintain process need to ensure that their needs are met. And they need to be trained on the processes so they adhere to the policies that are laid out."

Intertwined with standardization is effective planning, which Powell says should include not only capacity planning, but also evaluation of hardware additions according to energy usage policy, in accordance with facility management, and with security and compliance review. He recommends that the business owner identifies who will use the hardware, what will be installed on the new machine, the purpose for the new machine, and its interdependencies with other hardware and

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networked components. It's also helpful to be in tune with the vendor.

"Ensure that the hardware vendor can demonstrate machine capacity and scalability to accommodate future growth. Also, ensure that the vendor can demonstrate compatibility between new and older hardware, whether it is all single-vendor hardware or new hardware that must work with other vendor machines and peripherals," Power says.

Software Snags

Although the addition of software can bring much-needed change to a data center environment, it also introduces risk. Powell explains that the level of this risk is determined by the purpose and scope of the new software. For example, a new operating system, OS upgrade, or OS patch represents a change to base-level software that can affect the entire software infrastructure.

"Every application that runs on the OS, including databases, packaged software, and custom software, is dependent on the OS, and the dependencies must be tested in addition to the base OS functions. . . . IT must also test the middleware and network dependencies between software on other servers that interact with the software. The scope of the new software also determines the level of risk. Deploying a new ERP module—as opposed to deploying an entire ERP system—significantly alters the magnitude of challenges," Powell says.

Lance Roncalli, CEO, Perfman (www.perfman.com), adds that it's often difficult for data center managers to accurately predict the data center performance impact of adding new software. "This is no less true in today's increasingly virtualized data centers: Software on one virtual server won't crash software on another virtual server, but these processes will still compete for a physical server's I/O, CPU, and memory resources," Roncalli says.

Smoother Sailing

The need for standardization during the hardware addition process is echoed when

Biggest Improvement

There are plenty of ways to build a more efficient, streamlined software addition process, but perhaps the most effective way is to create an environment that supports and demands rigorous testing. Dennis Powell, senior product manager, StackSafe (www.stacksafe.com), explains that this isn't necessarily an easy undertaking, but it's nonetheless one that's well worth the effort.

"IT must commit budget, resources, and time to establish a truly representative staging and test environment in which IT can certify that the new software plays well with the existing software infrastructure," Powell says. "IT must also commit to test all aspects of the new software, including end-to-end system interoperation and dependency testing."

He adds that although thorough testing might add time to the prerelease schedule, it will save post-release time and effort, thanks to the reduction of impacts to production that would require IT to resolve the problems and/or roll back the software deployment.

dealing with software. According to Nadkarni, the biggest challenges when adding software derive from the platforms on which the software is installed. For example, if an organization is installing a product, such as endpoint protection, on a Windows server, the build of the server—including the OS version, the patch level, and other factors—become critical. The more standardized the server builds, Nadkarni says, the more consistent and reliable the software addition process.

"At the same time, documenting the environmental specifics and software install and testing process ensures that variations caused by users' input, vendor idiosyncrasies, and other change creep are minimized," he adds. "For example, if all customer software is installed in C:\APPS, then documenting the specifics around it ensures that all third-party add-ons look similar." □

Handling Unwanted Apps

Continued from Page 1

work is exposed. Most users are reasonable and will cooperate with IT when it comes to security. They don't want to be responsible for crashes."

Ryan Naraine, security evangelist for Kaspersky Lab (www.kaspersky.com), reaffirms education's importance. "Set aside some time to drum into users' heads that there's no real business value to peer-to-peer applications [and] that they only introduce risk," he says. "You can get real value by having a once-a-month memo,

town hall meeting, or even something as simple as someone from IT giving a talk about risky behaviors."

Beyond P2P apps, Naraine says some classes of software do serve a business purpose, citing PDF readers and Flash players as important additions to the average worker's toolkit. IT must accept that some tools carry a certain degree of risk and must manage that risk in a resource-effective manner.

Natalie Lambert, senior analyst of IT infrastructure and operations for Forrester Research, says companies have a range of options at their disposal as they consider how to secure their desktop environments.

"For organizations really looking to prevent user-installed applications on the desktop," says Lambert, "application control technologies, [such] as taking away administrator rights from users and running users as a 'standard user,' will do the trick."

Managing Risks

Naraine says banning an entire class of application, which many shops tried to do to IM soon after it first became popular, can destroy end-user productivity.

"You cannot block everything," he says, "so you create list[s] of what should be blocked—applications that have no value at all to the enterprise. In most cases, companies are realizing that an IM application has business value for interoffice communications and easily justifies the security risk."

An organization's tolerance of risk ultimately determines what is and is not allowed, says Naraine. High-value, high-sensitivity environments such as financial

services organizations often turn to thin clients or nightly re-imaging of systems to completely block end-user changes. Workers can make whatever changes they wish but will arrive the next day to a fresh machine.

"That's a practical approach for high-value environments that can't tolerate any level of risk," he says. "But this isn't feasible for everyone. In other environments, you can tolerate some risk in such a way that it reduces the impact."

Stay In Control

Lambert says that application control solutions from vendors allow fairly granular control over what can and cannot run on a PC. These technologies allow administrators to set up application blacklists and whitelists to ban unwanted applications and allow only supported code to be installed. However, this capability isn't perfect.

"While this may seem like an easy solution, it has its challenges," adds Lambert. "Maintaining these lists can be a real challenge for organizations." Another option, she says, is removing administrator rights to prevent employees from installing software or making system changes. Not only does this keep unwanted software out of the environment, but "it will bring your PCs to a higher level of security."

Naraine says over time, third-party applications are rendered redundant when newer versions of the operating system are introduced. IT should regularly reassess its whitelists and policies to account for these changes.

Warren says even though employees are the ones installing most of the unsanctioned applications, IT is ultimately responsible for anything that happens and must use every

Make Browsers Part Of Your Strategy

Ryan Naraine, security evangelist for Kaspersky Lab (www.kaspersky.com), says companies often overlook the browser's role when planning risk-reduction processes for end users. They shouldn't, though, as the browser is "probably the biggest class of software that can introduce risk into the technology environment."

A worm attack on an unpatched hole can take down the majority of an organization if everyone is using the same browser. Naraine recommends asking the following questions:

How exposed is the organization to attacks that target unpatched browser vulnerabilities? Would supporting more than one browser reduce the overall risk of everyone being taken down by a single attack? Is this risk reduction justified by the increased IT overhead required to manage multiple browsers?

Naraine recommends a diverse browser strategy to cut down this risk. For most organizations, the increased IT resourcing required to manage more than one browser type is validated by the mission-critical nature of this class of software.

tool possible, such as dashboards and network-monitoring utilities, to assess risks in real time. She also advocates speaking with suppliers, resellers, and even similar organizations. "Their challenges will likely become your challenges at some point in time." □

The Three Most Critical Steps

An effective management strategy for minimizing the risks associated with unwanted end user-installed applications should include the three following components:

- User education.** Whatever form you choose, make sure it is regularly updated and highly visible to employees at all levels.
- Patch management and maintenance.** IT must invest appropriate resources to balance the risk of certain applications against the underlying business benefits associated with their use.
- Whitelisting.** This is ideally an ongoing process driven by feedback and input from users across the organization.

Streamline The Hiring Process

Acquire & Keep Good Employees

by Chris A. MacKinnon

HIRING NEW EMPLOYEES in the small to midsized enterprise is a learned skill. If data center and IT managers do not take a strategic approach to the hiring process, they can miss out on the talent they need to remain at the forefront of their industries. So what can managers do to streamline the hiring process? What are some of the typical pain points in the process, and how can managers solve them?

According to Frank Han, vice president, Robert Half Technology (www.roberthalftotechnology.com), the most accomplished organizations take the strategic approach to hiring. Han explains, "They know how to effectively assess their IT staffing needs, conduct targeted interviews, and make prompt, competitive offers to attract the talent that fits their business needs." He says there are a few key tips that hiring managers can use as a part of their strategy.

Accurate Job Description

For starters, Han says it's important to create an accurate job description. "Focus on the work that must be accomplished, not the job title. For example, have your organization's priorities changed since the data center job was last filled? Can you redistribute the responsibilities to existing staff members? Would it make sense to bring in a project or contract IT professional instead of a full-time employee?" Han says managers should identify and develop a profile of the ideal data center candidate and then look for those specific qualities. "Be sure to use key words in your job description so you have a better chance of finding candidates with those specific skills or technologies."

Joyce Maroney, senior director at Kronos (www.kronos.com), says recruiters and hiring managers need to spend adequate time assessing the skills that are necessary for success in the job. Maroney says too many organizations recycle the same old requirements and are surprised when they don't find candidates who meet their current requirements. She elaborates, "Avoid 'kitchen sink' job descriptions; that is, be specific about the technical skills you are looking for. If you include long laundry lists of platform or product skills, candidates may apply if they only match on a few. You can save time by confining the job description to the skills required for success in the position."



firms." Han says savvy IT managers need to recognize the unique selling points of their companies—whether it's career growth opportunities, tuition reimbursement, or flexible work schedules.

Most hiring experts will agree with Maroney and Han, who both say that social media tools, such as Facebook, LinkedIn, Plaxo, and Twitter, are increasingly important tools that managers can use to attract talent.

"Encourage your current high performers to leverage their own networks to make people aware of your openings," Maroney advises. "Most companies find that their most successful hires are employee referrals. Make it worthwhile for your current employees to encourage their friends to apply by offering referral bonuses for key hires."

Han says the most effective online resources are those targeted at the IT indus-

BIGGEST IMPROVEMENT: Don't Delay Your Final Decision

When hiring qualified talent, Frank Han, vice president at Robert Half Technology (www.roberthalftotechnology.com), says it's critical to move quickly in the final stages of the hiring process. "A candidate's status can change

overnight, especially if the individual is highly marketable and possesses difficult-to-find skill sets," says Han. "A delay of just one or two days could mean the difference between you or your closest competitor bringing the individual on board."

Key Points

- When creating an accurate job description, hiring managers should spend time assessing the skills that are necessary for success in the position.
- Hiring managers are increasingly using social media tools, such as Facebook, LinkedIn, Plaxo, and Twitter, to attract talent.
- If high turnover is an issue in your organization and personality conflicts are a contributing factor, try using personality or work style assessments to better understand yourself and your employees.

try. He notes, "Highly skilled IT professionals are less likely to post their résumés on generalist job boards. Using online resources allows companies to increase the quality of their candidates by cutting back on the number of unqualified responses. The downside to using online resources alone is that they don't provide a company the hands-on expertise offered through a specialized staffing firm or skilled recruiter." Han says these resources generally have the industry expertise that lets them make a better fit for a company's individual needs.

Joseph N. Impastato II, president and founder, now-HIRE (www.nowhire.com), says one thing that will help managers to streamline the hiring process is an ATS (applicant tracking system). Impastato says, "If you don't have an ATS, get one. That will be a huge streamlining improvement. If you do, integrate your career Web site with your ATS so applications go directly into your system. Also, consider using self-selecting assessments as part of the job application process so you only see applications from qualified people." He says an ATS can help managers set up an automated approvals process so no one misses a step and all parties are consulted. He adds, "You can also use your ATS to keep in touch with applicants, send out decline notices, and schedule interviews."

Pain Points

Han says one pain point that hiring managers may not consider is the potential scalability and growth of the data center. "As a result, they may hire for the needs of job now without considering how the position may evolve over time," he says. "When hiring for a data center, you ultimately want to look for candidates with similar backgrounds who can be flexible as the needs of your data center change. They should have a basic understanding of the environment size and needs, and potential scalability."

Impastato says another typical pain point is dealing with high turnover. He notes, "If turnover is higher than the industry norm, it is because of poor compensation or personality conflicts." Impastato says the former is out of the hiring manager's hands, but the latter is something a manager can address. "Using personality or work style assessments is a great way for managers to understand their own way of being and that of their employees. Managers can learn to interact with employees in ways that foster good communication, trust, and loyalty. It's proven that people tend to stay at jobs that foster a good work environment, even if other conditions—like pay, hours, and benefits—are not that great." **P**

New Data Center Openings Meet On-Demand Needs

With recent server farm investments of \$1 billion from Microsoft and \$600 million from Google, as well as similar investments from such companies as IBM, Oracle, and Yahoo!, large software vendors and many other Internet companies are looking to invest in greater amounts of storage to accommodate their future needs. In many cases, the data centers will provide the storage capacity tech vendors need to deliver on-demand business to enterprises as well as consumer applications and to provide reliable access to content and custom applications from any location.

According to DRT and Campos Research, between now and 2010, 80% of U.S. companies are planning to expand or refresh existing data center facilities. Additionally, Info-Tech predicts that by 2010, SaaS will account for 20% of the enterprise applications market. Darin Stahl, research lead at Info-Tech Research Group, says that "many of the facilities for data centers, from big tech vendors to small enterprises, are beginning to get a little long in [the] tooth, and some of the facilities can't be expanded any farther." He goes on to say that "the delivery of new applications and content requires massive amounts of servers; it's often more cost-effective to build a new data center to fuel the new operations."



For instance, IBM's Rich Lechner, vice president of energy and environment, says that "IBM's new Raleigh center is designed to help clients streamline their IT in 'hybrid clouds' that allow clients the maximum flexibility to move assets in and out of the IBM cloud based on demand and business need."

Besides future growth for on-demand applications, the new data centers may be used by tech vendors to provide failover storage at a remote site. The adoption of server virtualization, affordable SAN platforms, and cheaper bandwidth costs have in some cases made it more cost-effective for companies to build their own failover sites.

An Affordable Solution

New data centers are often located in areas with less expensive land costs, and as an added bonus, many of the locations, such as Omaha, Neb.; Berkeley County, S.C.; and Pryor, Okla., feature a power grid that isn't already taxed by other energy-hungry operations. In fact, Stahl says, "a number of our customers have said that the existing hydro-grid cannot increase delivery to meet the power demands of the data center."

The new data centers offer both the power and storage to handle the types of computing ideal for on-demand access, such as financial portfolio analysis, mobile phones as payment centers, and working with millions of connected devices.

Microsoft On Board With AMQP

AMQP (Advanced Message Queuing Protocol) is an open Internet protocol for business messaging, and although the specification was initiated by many of Microsoft's competitors, the tech powerhouse says it will join in the industry effort to establish the protocol as a standard way for business software to communicate. Essentially, the protocol will establish a common method for sending messages between software applications from tech vendors. In a recent press release, Microsoft indicated that it's seeking to contribute toward the development of messaging infrastructure and help enable greater customer choice in the marketplace. AMQP will also provide Microsoft with an alternative to its current messaging options, as well as greater interoperability in industries such as financial services, insurance, and health care.

Contract & IP Cases Top Litigation Issues

According to a study from Fulbright & Jaworski, contracts and IP cases were near the top of all company's litigations problems this year. In fact, many technology and communications companies faced more IP dispute claims than personal-injury cases. Financial services firms saw the highest incidence of securities actions, while healthcare companies reported the most claims from professional services. However, the survey found



that technology and communications firms reported the fewest lawsuits of the business sectors surveyed. For instance, only 30% of tech and communications vendors were faced with six or more litigation suits, while two-thirds of insurance companies faced at least six or more suits. Fulbright & Jaworski also found that 45% of U.S. companies spend at least \$1 million annually on litigation.

Sun Posts Losses For Q1

Sun Microsystems' Q1 revenue was down 7% year over year, with the company reporting revenue of \$2.99 billion for the quarter. Sun also posted a net loss of \$1.68 billion, or \$2.24 per share, for the quarter; the loss represented a drop from a net profit of \$89 million, or 10 cents per share, for the same quarter last year. The company's financial report missed the \$3.06 billion mark predicted by market analysts. In a statement, Jonathan Schwartz, Sun Microsystems' CEO, pointed to the economic woes facing his company's customers as the likely culprit for the grim report.

CA & BMC Report Growth, Prepare For Slowdown

CA and BMC are financial bright spots during a gloomy round of fiscal reports, with each company posting better-than-anticipated earnings for the second quarter of fiscal 2009. CA reported total revenue for the second quarter of \$1.107 billion, a 4% rise from the \$1.067 billion reported in the same quarter last year. North American revenue increased 3% in the second quarter, and total net income climbed considerably to \$209 million, up from \$137 million year over year. As for BMC, all major geographies posted double-digit Q2 revenue growth. The company's revenue jumped 11% to \$467 million, up from \$420.7 million the previous year. Despite decent financial results for the quarter, however, both companies are predicting a slowdown in growth in the quarters to come, citing the struggling economy.

Decommissioning Equipment

What Happens To Old Equipment When The New Batch Arrives?

by Elizabeth Millard

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THE PACE OF TECHNOLOGY means that every purchasing round usually involves buying fresh appliances, servers, desktops, laptops, and other speedy, memory-laden tools.

But creating a transition from old to new isn't as simple as freshening up a wardrobe or revamping a room, because older equipment can't be thrown in the dumpster or just given to charity. Also, switching to newer machines has other considerations, such as power, cooling, and maintenance contracts.

Because of the complexity of making the shift, some companies choose not to do it at all, keeping their old machines hooked up to the network or simply plugged in even though they're no longer used. That approach is more common than many might think, says Uptime Institute's Ken Brill, and it creates an enormous drain on physical resources.

"You have these vampire machines that are drawing power even though they're no longer used," he says. "That creates a strain on every system, from cooling to electrical."

Many of these machines are even still under maintenance contracts or bundled into software-per-seat arrangements, he



likely be similar to what's done during major network upgrades or patch days, in which the system is switched over at a time when employees are least likely to be trying to access company resources.

Reduce, Reuse, Recycle

Discarding old equipment involves adhering to state and national regulations regarding what can be tossed and what needs to be handled through technology recycling firms. For companies to create a

"You have these vampire machines that are drawing power, even though they're no longer used. That creates a strain on every system, from cooling to electrical."

- Uptime Institute's Ken Brill

adds, which means that even though they're not used, the equipment is still eating into the budget every month.

Assessment & Transition

If the data center doesn't already have a comprehensive plan in place about transitioning from older equipment, now's the time to create one. A schedule should be set, says Brill, that includes an expected end date for each piece of equipment (see the "Biggest Improvement: Creating An End-Of-Life Chart" sidebar for more information), maintenance schedules, and proposed changes to the configuration of the physical space or the types of equipment being purchased.

Particularly important are the maintenance agreements, Brill says, because some equipment could run beyond those dates, and a data center manager would be out of luck in terms of breakdowns. A vendor might be able to tweak agreements based on an SME's schedule, so make that part of the negotiation over new equipment.

When physically bringing new equipment into the data center, the transition will

robust policy, it's advisable to develop a relationship with a recycling firm so a regular pickup can be scheduled.

For example, an SME might arrange to have older equipment recycled three times per year on the same dates every year. This gives IT a solid deadline for getting rid of old machines, and these deadlines can be tied into purchasing cycles.

Biggest Improvement: Creating An End-Of-Life Chart

Every piece of equipment has a life expectancy, and even though some machines can outlast their proposed end dates, data center managers should still keep track of how well they're holding up.

In some cases, equipment that seems to be fine should still be replaced as a matter of policy, especially if it's more than a year past its expected expiration date. Experts note that it's better to pull the plug on a machine while it's still functioning

Key Points

- Do an initial assessment of the data center's equipment, including life expectancy of each machine, new power and cooling levels, and proposed efficiencies.
- Develop a transition plan that will impact the company as little as possible, such as doing the work over a holiday weekend.
- Talk to computer recyclers about what type of equipment they can handle and ask to see their facilities to get more information.

If new equipment is purchased every February, for instance, a tech recycling firm can pick up older equipment at the beginning of April, which would give IT time to implement the new equipment and do any exchanges if a fresh machine is faulty. But it doesn't allow enough time for machines to be stacked up in closets and generally get in the way of regular operations.

When choosing a recycling firm, it's a good idea to visit the company's facilities, advises Robert Houghton, president and CEO of asset management firm Redemtech (www.redemtech.com). Not only will this create stronger relationships, but it will also give an IT manager a better understanding of how equipment is handled

once it leaves the data center and what type of security measures are used in shredding data, erasing hard drives, and generally reducing a company's liability should the machine end up in the hands of a digital miscreant.

Other strategies might be creating an employee buyback program or thinking of other creative ways to handle the equipment, notes Cliffie McKay of DMD Systems Recovery (877/777-0651; www.dmdsystems.com).

"Computer recyclers offer to dispose of the equipment for a very limited cost, occasionally even offering a return for the equipment if it still has value," McKay says.

Another tactic is simply to reduce the amount of equipment that's maintained. This can be done with the use of a colocation facility that will do hosting or employing more virtualization that cuts down on the number of servers. Less equipment can alleviate other challenges, such as the need for increased cooling, cable management, and space issues.

"It all comes down to making the data center adaptable for new configurations," says Peter Panfil, vice president of UPS Engineering at Liebert (www.liebert.com). "You want to be able to add capacity in the future, but you need a good idea of what that's going to look like." **P**

al rather than waiting for it to break down and cause problems across the data center. The chart should be part of a regularly scheduled decommissioning purge done as part of the purchasing and subsequent recycling go-round. Although it may take work on the front end to put this type of schedule together, a data center will likely realize greater efficiencies before too long. Also, putting one person in charge of the whole process helps to streamline maintenance, transitions, and purchasing.

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The DS19000 v.2 VTL family is the third generation of virtual tape solutions by DS1 and continues the company's goal of offering innovative and competitive storage solutions for data backup and recovery.

CLIENTS

OCTOBER 17, 2008



The Lenovo ThinkCentre A62 is a cost-effective business desktop PC complete with various management and productivity utilities.

Starts at \$399

(866) 968-4465

www.lenovo.com



Attractively Priced, Environmentally Friendly Desktop

Lenovo ThinkCentre A62

Businesses today need versatile computing gear that they can rely on for strong and steady performance. They also need equipment that's cost-effective but environmentally friendly. Lenovo's new ThinkCentre A62 desktop tower PC covers all this and more.

With 15 months of rated stability via the inclusion of AMD's business-class Athlon 2650e 15-watt processor and increased efficiency by consuming 40% less electricity than the ThinkCentre A62's predecessor, the A62 gives businesses a computing base they can count on. The ThinkCentre A62 has also been GreenGuard-, EPEAT

Gold-, and Energy Star 4.0-certified and offers the world's only green fingerprint keyboard, which is constructed of 35% post-consumer recycled material, as an optional purchase.

Productivity-wise, Lenovo offers Dash 1.1, a remote-managing utility that lets users boot, audit, and update the A62, as an optional purchase, while Express Repair provides versatility and convenience by fixing various system-corruption problems, many in less than three minutes and without adversely affecting the data stored on the A62, the OS, or software that's running. Lenovo's own built-in ThinkVantage Technologies include

various management and productivity utilities, such as a software image builder, one-button recovery, secure data deletion, and the ability to switch between wired and wireless connections and quickly deploy critical updates. Combined, the ThinkVantage Technologies take care of performance-related issues so IT staffs can concentrate on more pressing organizational issues.

The A62 ships with a built-in GbE port, 1GB of PC2-5300 RAM, ATI Radeon TM 3100 graphics, 160GB of 7,200rpm SATA II storage, and a DVD-ROM drive. Windows Vista Home Premium is included with other editions offered as options.

SECURITY

OCTOBER 17, 2008



Comodo SecureEmail uses PKI-based technologies to encrypt and digitally sign outgoing emails, preventing tampering during transmission.

(888) 266-6361

www.comodo.com

Email Security Software Provides "Whole Journey" Encryption

Comodo SecureEmail

Unsecured email messages can potentially be intercepted, read, or edited by anyone along the way. Most of the companies handling email messages are trustworthy, but if one computer on an email's route is compromised, anyone could read the private information within.

To those concerned about email security, Comodo offers its SecureEmail. Comodo SecureEmail employs PKI-based technologies that encrypt and digitally sign outgoing emails, preventing tampering during transmission.

Many enterprises encrypt messages as they leave the corporate perimeter, leaving internal mail vulnerable to malware. Comodo SecureEmail provides whole-journey encryption from sender's mail client to recipient's mail client—the only way to completely secure the exchange. Comodo SecureEmail helps companies comply with HIPAA,

Sarbox, GLBA, PCI, and the UK Data Protection Act.

SecureEmail integrates with Microsoft Outlook, Mozilla Thunderbird, and other S/MIME-capable email clients. It includes a wizard to download a free Comodo email certificate, or it may be used with third-party SSL certificates. Comodo SecureEmail automatically generates a unique single-use session certificate to encrypt outgoing emails to recipients whenever an email certificate is not present on the system.

Comodo offers this solution free to encourage the practice of signing and encrypting email communications to protect users from vulnerable email exchanges.

C·O·M·O·D·O
Creating Trust Online™

STORAGE

OCTOBER 10, 2008



Data Protection Solutions by Arco EzRAID DD4 FlexMount is an inexpensive and space-saving SATA RAID 1 controller.

\$289

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www.arcoide.com

Up-To-The-Minute Drive Mirroring

Data Protection Solutions By Arco EzRAID DD4 FlexMount

As many computer users and companies move from IDE to SATA hard drives, the need arises for a RAID 1 controller in the same small form factor and with the same ease of use as IDE versions. Data Protection Solutions by Arco's solution to the demand is the EzRAID DD4 FlexMount.

The FlexMount has a high-impact, black plastic shell to protect it from other electrical components in the computer case. It can be mounted virtually anywhere inside the case where users can fit the tiny 3.5- x 2.2-inch device. It connects via included SATA cables and doesn't occupy a PCI slot on a computer or need PCI bus power or a drive bay.

Once installed, the FlexMount sends all writes to both drives simultaneously, creating and maintaining an up-to-the-minute mirror of the

computer's other hard drive. One useful feature of the FlexMount is that if one of the drives fails, users will receive an audible alert, but the other drive will take over, preventing the computer from shutting down.

Included with the FlexMount is a PCI slot bracket that has a serial port, status lights, and an alarm reset button. Though the bracket occupies an opening in the case, it does not use a PCI slot. The FlexMount is compatible with all SATA drives and partitioning schemes and doesn't require drivers or IRQs. The included software utility can be installed on Windows or Linux machines. Users can also run the software off the CD-ROM, allowing use of the FlexMount with most operating systems, including Windows, DOS, Linux, OS/2, Unix, Solaris, and NetWare.

Data Protection
SOLUTIONS BY ARCO

PRODUCT OF THE WEEK

Simplified Complex Computing

ScaleMP's vSMP Foundation Offers SMEs High-End Computing Without High-End Costs

by John Brandon

• • •

IF YOUR DATA CENTER has been charged with a complex computing task, such as creating a 3D model based on petabytes of data or analyzing DNA samples, the normal route is to invest in a compute cluster or a supercomputer. Yet the financial investment required for such solutions is astounding, usually several hundred thousand dollars, and just building the architecture can take years. To help SMEs achieve complex goals without breaking the bank, ScaleMP developed its vSMP technology, which can use commodity hardware for symmetric multiprocessing, aka SMP, and help make high-end computing tasks more attainable for SMEs.



ScaleMP™

PRODUCT OF THE WEEK

ScaleMP vSMP Foundation

Description: Symmetric multiprocessing software that creates a virtual high-end computer across several modes in a cluster or blade server system and helps simplify installation and maintenance

Interesting Fact: ScaleMP believes the next phase of SMP technology is to virtualize it even further in order to use the resources for multiple tasks without being tied to specific hardware, much like the way mainframe systems are increasingly virtualizing application delivery.

(877) 629-8767
www.scalemp.com

"Before ScaleMP, building high-end computers was an expensive and lengthy endeavor," says Shai Fultheim, founder and president of Cupertino, Calif.-based ScaleMP (877/629-8767; www.scalemp.com). "It could take up to three years to design and build a high-end computer, requiring tens of millions of dollars and proprietary components. Today, a high-end system can be created in minutes using ScaleMP's aggregation software on industry-standard hardware platforms. Such virtual systems enabled by ScaleMP's software offer industry-leading performance without the high cost of traditional SMP systems."

ScaleMP's main product is called vSMP (Versatile SMP) Foundation and is available in Embedded and Standalone versions. Similar to server virtualization, vSMP Foundation creates a virtual high-end computer across several nodes in a cluster or blade server system. The software helps simplify installation and maintenance of a hardware-based approach.

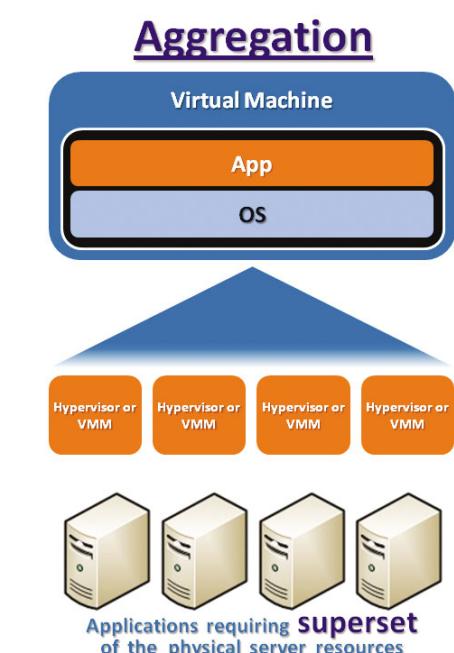
"The vSMP architecture from ScaleMP aggregates multiple industry-standard x86 systems into a single virtual system, delivering a high-end symmetric multiprocessor computer," says Fultheim. "The ScaleMP vSMP Foundation aggregation platform creates virtual systems ranging from four to 32 processors (128 cores) and up to 1TB of shared RAM. It is optimized for compute- and memory-intensive workloads, making it the ideal platform for the high-performance computing (HPC) market."

How vSMP Works

While the concept of vSMP mirrors how virtualization works, it is actually the opposite effect: Virtualization uses one server to host multiple operating systems, while ScaleMP's vSMP platform uses multiple computers to create one high-end computer. The result is the processing bandwidth required for large-scale computer cycles without the complexity of a supercomputer.

"ScaleMP's software takes a collection of commodity servers and turns it into a

single symmetric multiprocessing machine," says Robin Harris, an analyst with Data Mobility Group. "It differs from VMware and other virtual machines in that it takes a collection of systems and clusters them into a single virtual system. VMware



ScaleMP's vSMP Foundation architecture aggregates multiple x86 systems into a single virtual system.

takes a single machine and [divides] it into a group of individual virtual machines. It differs from other cluster technologies in that it offers the convenience of a single SMP machine—simpler management, stability for multiple applications, flexible job scheduling—at a fraction of the price of conventional SMP systems."

Ideal Fit For SMEs

Not only are the costs for building high-end computing platforms exorbitant, but maintaining them often requires enterprises to have full-time staff members on hand to manage the hardware. Fultheim says ScaleMP's vSMP technology is an ideal fit for an SME that does not have the extra staff on hand to configure and maintain a hardware cluster.

There's another added benefit, as well: The ScaleMP approach uses less power, cooling, and rack space, all of which are critical factors for an SME that would not normally have the space in a data center for a high-end computer.

Fultheim explains that there are many benefits to any company in using vSMP. "ScaleMP works well for compute-intensive applications (numerical and engineering simulations) and memory-intensive applications (very large modeling and business intelligence)," he says. "The benefits of this approach are cluster consolidation and infrastructure optimization (reduction in number of managed entities), improved utilization (reduction of data center fragmentation), and physical infrastructure cost reduction (traditional SMP systems, unified I/O), as well as greener computing."

Another key benefit is in large memory access. Even newer servers can only access about 4 to 6GB of RAM at most. After implementing vSMP, there's no need to use a hard drive as a swap drive for RAM. Applications can access hundreds of gigabytes of RAM through vSMP.

A Unique Offering

ScaleMP is essentially alone in the industry in providing a software-based symmetric multiprocessing system, which presents a new kind of challenge in that the company has to compete only with the hardware vendors. "There is no direct competitor to ScaleMP's approach of aggregation of industry-standard x86 systems to create a single virtual shared memory system," says Fultheim. "However, ScaleMP's virtualization technology could be considered competitive to traditional high-end SMP systems from various system vendors or as a complementary approach to cluster management solutions."

Fortunately, there is an increasing trend in IT to use commodity hardware and to find ways to avoid large expenditures, especially in today's troubled economic environment.

"Scale MP is part of a broader movement to bring the benefits of cluster computing based on commodity hardware to customers worldwide," says Data Mobility Group's Harris. "Ever since Google demonstrated that it was possible to build very large-scale mission-critical infrastructures based on low-cost commodity hardware and clever cluster software, more and more CIOs have realized that commodity-based cluster computing is part of their future. ScaleMP is attacking a specific market segment—large-scale SMP systems—with a commodity hardware-based cluster architecture."

ScaleMP vSMP's advantages include simple management, low costs, stability and scalability for applications, and flexible job scheduling. In an age of one-box solutions, the company offers a product that scales according to the needs of a company and saves money by using existing infrastructure. □

MESSAGING & TELEPHONY

OCTOBER 10, 2008



The Jazinga IP PBX appliance is designed for the average person to be able to set up a complete PBX system in a small business setting.

\$1,095

(800) 671-0677

www.jazinga.com

Jazinga
communications simplified

DIY Telephony

Jazinga IP PBX Appliance

Employees sometimes take the phone system for granted, but setting up a telephone system for a business usually takes quite a bit of work and planning. Those who configure the system need to be experienced and savvy.

The Jazinga IP PBX appliance is designed to enable the average person to set up a complete PBX system in a small business setting (the system is intended for businesses with up to 20 employees). Jazinga features high-end corporate phone system capabilities in addition to wireless networking, fax, and email.

Phones—including IP or traditional PSTN (Public Switched Telephone Network) models—can be plugged into the network, where Jazinga automatically detects and configures them. To complete

configuration, users are guided through an on-screen wizard. Setup is designed to take only about 10 minutes. After configuration and setup are complete, you can easily add users and conduct administrative tasks on the system.

Features of Jazinga include auto-attendant, voicemail, conferencing, call forwarding, and on-hold music. Jazinga ensures call quality by implementing QoS and prioritizing voice calls over data traffic.

Jazinga folds all the above options into a package that is designed to cost significantly less than other solutions with similar features. Most importantly, the Jazinga system negates the cost and time usually required for IT professionals to set up a telephone system.

Product Releases

Do you have a new product that data center/IT managers would be interested in learning about?

Send your press release or related product information to press@processor.com.



CLIENTS

■ Datacard Artista VHD & MX6000

In order to enhance small-batch processing and quality assurance for card issuers, Datacard has announced the combination of two technologies to help companies achieve a significant gain in efficiency. The combined technologies, Datacard Artista VHD retransfer color printing module and the verification module for the Datacard MX6000, intend to reduce production times by utilizing the MX6000's truly modular design and Artista VHD's speed (up to 1,500 cards per hour). Working alongside the MX6000 is the vision verification module, which provides thorough quality assurance and reduces potentially expensive errors.

■ Datacard Smart Card Designer Tool

Datacard has announced the release of its Smart Card Designer Tool for use with Datacard identification software. Smart Card Designer reduces the time and cost of developing customized smart card applications. Smart Card Designer can be used with other Datacard products, such as the Datacard card printer, identification software, and card coupler. With Smart Card Designer, users can quickly and easily test their smart card designs. The new tool is integrated with

Datacard identification software, including IDCentre Gold v6.5 and ID Works Enterprise v6.5. The tool is also compatible with smart card-enabled Datacard desktop CP Plus and SP Plus card printers.



■ Fujitsu Computer Products fi-6010N iScanner

Fujitsu Computer Products announced its next-generation network scanner, the Fujitsu fi-6010N iScanner. The latest network scanner features a new Web-based centralized control utility, which allows network administrators to assign scanning profiles to users or groups of users and enables remote delivery of software updates, as well as access to usage information for all the scanners in the network. The fi-6010N iScanner also offers organizations the ability to send updates and change settings to groups of network scanners rather than having to make adjustments to each individual scanner. The Fujitsu fi-6010N iScanner has a large 8.4-inch XGA color touchscreen display that allows users to

zoom, pan, and rotate each scanned image, making indexing and image verification easy. In addition, the new scanner includes an integrated US 101 keyboard. Complete with a 50-page ADF (automatic document feeder), the fi-6010N iScanner scans in color, grayscale, and monochrome at duplex speeds up to 25ppm and offers true 600dpi optical resolution. The network scanner also boasts ultrasonic double-feed detection, long document scanning support (up to 34 inches), and hard or embossed card scanning through the main ADF.

■ WIN Enterprises PL-10540 & PL-10550 Desktop Platforms

WIN Enterprises has announced that the PL-10540 and PL-10550 desktop platforms now feature the Intel EP80579 Integrated Processor with Intel QuickAssist Technology, an Intel SoC (system on a chip). The chips are designed with highly integrated security features for SOHO/SMB network management and network security applications, including antispam, antivirus, and intrusion detection and prevention; firewalls; and VPNs. The PL-10540 supports 4GbE LAN capability, while the PL-10550 supports 5GbE. Other features include 256KB of L2 Coherent Cache, a compact size, four or five 10/100/1000Mbps Ethernet, SATA HDD support, USB NAND flash support, and dual-color programmable LEDs. Linux, Windows Embedded, and FreeBSD operating systems are supported.

MESSAGING & TELEPHONY

■ AXS-One Dynamic Data Migrator

AXS-One has announced improvements to Dynamic Data Migrator, the company's messaging migration software. Migration

modules for calendars and contacts have been added, resulting in a complete integrated software solution for mail migration and coexistence. The software is designed to offer an end-to-end solution for Lotus Notes Application Migration when partnered with technologies from CASAL and Unify. Other features include a single-solution, best-of-breed approach that addresses requirements for email, calendars, contacts, and applications and effective coexistence with the Lotus Domino environment.

■ MX Logic Message Archiving Service

MX Logic has unveiled the MX Logic Message Archiving service, with a restructured user interface and improved search capabilities so organizations can quickly find and recover stored messages. The Message Archiving service provides unlimited storage capacity so organizations don't need to worry about the increasing volume of data and email. All inbound, outbound, and internal emails (along with email attachments) are automatically secured, and gaps in mail storage are prevented, making manual backups unnecessary. The Message Archiving service features integrated compliance rules so organizations can work with all messaging regulations.

NETWORKING & VPN



■ Acresso AdminStudio

Acresso announced that the AdminStudio application-readiness program will offer beta support for Microsoft App-V (Application Virtualization) early next year. Interested

Go to Page 16

NETWORKING & VPN

OCTOBER 10, 2008



AirMagnet Enterprise 8.1 helps users trace and block devices centrally or distributed, over the wire or wirelessly over the air, and manually or automatically.

Starter kits begin at \$8,999

(408) 400-0200

www.airmagnet.com

AIRMAGNET
Wireless Network Assurance

Weed Out Rogue Devices

AirMagnet Enterprise 8.1

Security is an essential component to all wireless LANs for enterprises, but some providers are not living up to the standard of protection organizations require.

AirMagnet Enterprise 8.1 lets customers quickly trace and block dangerous devices physically connected to a network via complementary tracing techniques. These techniques utilize AirMagnet's sensors to execute local tracing of the sensor's immediate

environment and global, centralized tracing using the AirMagnet Server. The sensors and the server share data to create a global view of the network and learn from both past and present discoveries and traces.

AirMagnet 8.1 allows users to find, hinder, and record every rogue device. AirMagnet provides swift tracing through its improvements to tracing mechanisms. Users can trace mechanisms

centrally or distributed, over the wire or wirelessly over the air, and they also have the ability to trace manually or automatically, depending on policy.

AirMagnet 8.1 users can allay various types of wireless threats through a scalable WLAN monitoring program. In addition, users can tighten policies to avoid performance issues and ensure users worldwide are complying with regulations of all their Wi-Fi assets.

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Moving From

COVER STORY
The Used & Refreshed Equipment Market
We take a look at why and how companies are turning to used equipment for their IT needs, and what's involved in getting the most value out of it.

TECH & TREND
Challenges Of Moving To Btrfs
Moving to the file system is often touted as a way to increase performance and reliability. But is it really worth the effort?

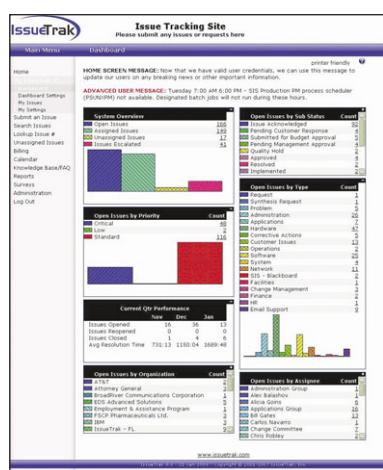
CLOUD & UTILITY COMPUTING
These concepts have different pros and cons, but both can be useful for certain applications.

Servers: Don't Forget Apple?
Should Dell and Apple be their own server companies? And if so, how do they compete with each other?

Processor Releases | Page 10

NETWORKING & VPN

OCTOBER 10, 2008



IssueTrak Issue Tracking Software
simplifies problem tracking and task and trouble ticket management.

(866) 477-8387

www.issuetrak.com

Web-Based, Zero Footprint Software

IssueTrak Issue Tracking Software

Your enterprise likely has many problems that arise, issues that need to be resolved, and tasks and trouble tickets that need to be managed. Problems pertaining to call centers, outsourcing, finances, human resources and facilities are complicated and often difficult to keep track of. IssueTrak Issue Tracking Software was created to help recognize and manage these problems.

IssueTrak's software can be customized to help your organization increase productivity, manage resources and simplify issue resolution across your entire organization, department, or team.

IssueTrak's Task Manager lets you assign multiple tasks to be completed within an issue. Choose a single or group of tasks from a menu or on an ad-hoc basis. The Task Manager will notify users that tasks have been assigned to them and cancel remaining tasks after a specific response to a previous one.



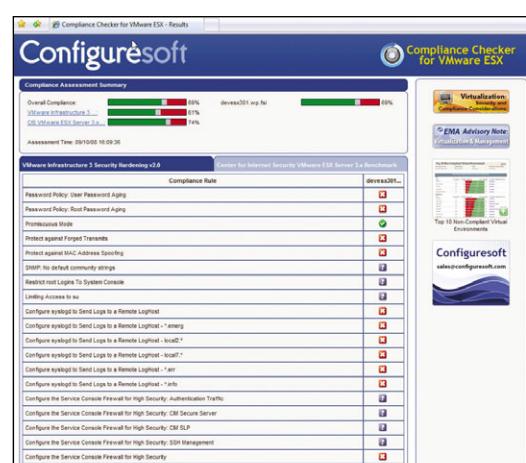
The Quick Picks feature lets you auto-populate your entry screen by selecting from a drop-down menu. Quick Picks can include tasks for a powerful combination.

The IssueTrak Dashboard lets you view metrics such as number of open, unassigned and escalated issues; average response time; service-level agreement compliance averages; and open issues by assignee, type and priority.

Project Management lets you create projects and assign issues and tasks. From the Project Summary screen, you can view a high-level or detailed list of all projects. IssueTrak also features automatic scheduled reports with several reporting options. Pre-existing summary reports and saved searches can be run on the fly.

SECURITY

OCTOBER 3, 2008



Configuresoft Compliance Checker is a utility that checks VMware ESX environments for compliance and produces reports for review or archival.

Free

(719) 447-4600

www.configuresoft.com

Compliance For Free

Configuresoft Compliance Checker

Every company needs to ensure compliance, so having a free tool that helps administrators meet compliance standards in real time is invaluable.

Configuresoft addresses this very issue with the Configuresoft Compliance Checker, a utility designed to help VMware customers ensure security compliance with industry standards and best practices across ESX virtual infrastructures. Compliance Checker compares ESX hosts to VMware Infrastructure 3 Security Hardening Guidelines and the CIS (Center for Internet Security) VMware ESX Server Benchmark.

The Compliance Checker can run compliance tests and produce detailed reports with rule-by-rule feedback on up to five ESX servers simultaneously, supports VMware ESX hardening guidelines and CIS Benchmark for ESX, and lets users view assessments by both machine and benchmark type. Users can print, save,

and email assessment reports for review by other parties or for archival purposes.

Users can download the Compliance Checker from Configuresoft's Web site directly to a Windows desktop and manage it through an intuitive Web-based interface that lets administrators easily locate and specify which ESX hosts need to be tested. The report itself sports detailed rule by rule feedback.

The Compliance Checker provides audit-quality reports, problem detection before an environment becomes insecure, and remediation advice. Users also gain access to podcasts, webinars, and whitepapers on compliance and security issues, and Configuresoft offers a knowledge base for troubleshooting and additional information.



Processor.com

Product Releases*Continued from Page 15*

organizations can register for the beta program now. AdminStudio saves users money by saving time, Acresso says. It helps to clarify decision-making regarding virtualization of applications, and it also facilitates the virtualization packaging process itself.

■ AppSense Management Suite 8.0

AppSense has made available the AppSense Management Suite Version 8.0, which includes the Environment Manager 8.0, Application Manager, and Performance Manager. The user profile migration rapidly moves data from physical to virtual settings. Application-level streaming prevents large downloads at logon. With personalization rollback, user settings can be restored to reduce the price of damaged profiles. The Management Suite 8.0 also features Disk I/O control, network access control of outbound connections, and policy template options.

■ Avocent DSView 3 Management Software

Avocent has announced the latest version of DSView 3 Management Software, which now includes support for access and control of complex hybrid virtual and physical server environments. This version also supports Citrix XenServer virtual environments so customers can use a single browser-based management tool for a federated view of multiple virtual and physical servers in a single screen. Other benefits include support for Windows Server 2008, new iPDUs, CACs (common access cards), and smart cards. It also features an improved GUI designed for better ease of use.

**■ BlueCat Networks Proteus IPAM Intelligence Solution**

BlueCat Networks has introduced Proteus, an IP address management (IPAM) Intelligence solution for automated IP network tracking. Functioning as an abstraction layer for DNS and DHCP, Proteus provides increased visibility within IP networks and implements noninvasive layering methods to transfer data/routing packets. Proteus' enhanced data accuracy discovers and reclaims IP addresses; this advancement detects addresses allocated in the IP database, unknown IP addresses, and mismatched IP data where new MAC addresses are paired with old addresses. Newly simplified GUIs allow administrators to model out and deploy IP networks; specific data can then be filtered and sorted to accurately update audit trails.

■ CA IDMS r17

CA unveiled the latest version of the CA IDMS, which is a mainframe database management system for the enterprise. CA IDMS r17 utilizes the IBM System zIIP (z Integrated Information Processor) to handle portions of typical IDMS production workloads, such as online transaction systems tasks, batch processing jobs, and distributed platform requests. CA IDMS r17 also supports CICS threadsafe applications, high-volume Web transaction processing, fault-tolerant dynamic system changes, dynamic journals, online index tuning, simplified installation using electronic software delivery, workfile automation for database reorganizations, automatic extensible scratch management, large-format files for database and journal files, and improved diagnostics.

**■ Computacenter & FrontRange Solutions Software Asset Discovery**

Computacenter has joined with FrontRange Solutions to release a SaaS tool the

companies say can save customers money while also offering better vision into the customers' company's software areas, thus ensuring compliance without adding to the company's internal overhead. The new Software Asset Discovery service is based on a hosted version of Centennial Discovery from FrontRange Solutions. Computacenter says the service will help it provide its customers an easy-to-use, secure service for monitoring software infrastructures via a Web-based interface. Computacenter is offering Software Asset Discovery service alongside its Software Asset Appraisal service.

■ Force10 Networks VirtualView

Force10 Networks has released VirtualView for traffic management and provisioning. As part of the Force10 operating system, IT administrators are able to monitor VM services through VirtualView. VirtualView is designed to analyze real-time traffic activity; additionally, data center managers can use VirtualView for troubleshooting virtual environments and benchmarks. According to Stephen Garrison, vice president of marketing at Force10 Networks, "Virtualized network environments . . . continue to show even greater potential for businesses that require flexibility and efficiency in their data center. VirtualView helps realize that potential by lowering network TCO through faster virtual machine deployment and enhanced monitoring that fosters greater flexibility to respond to changing application requirements and network conditions."

**■ FrontRange Solutions Enteo v6 SR2**

FrontRange Solutions has released the Enteo v6 SR2, which is part of the Client Lifecycle product line produced to help companies incorporate protected zones and software virtualization into IT systems based on VMware Thinapp. The Enteo v6 SR2 helps manage DMZs (demilitarized zones), without having to modify firewall or other security settings. Enteo v6 SR2 includes new features, such as support for Windows 2008 Server deployment, the addition of FrontRange ITSM solution, and the ability to directly import IT asset data from the Centennial Discovery audit solution. Enteo v6 SR2 allows for the deployment and management of virtualized applications to be the same as physical operating systems, applications, and patches.

■ Sun Microsystems Sun Systems For MySQL

Sun Microsystems launched several new Sun Systems for MySQL, which are ideally suited to the Web service delivery needs of enterprise customers. New releases include Sun Systems for MySQL x86 Performance, Sun Systems for MySQL Virtualization, Sun Systems for MySQL Multi-tier Deployment, Sun Systems for MySQL Rich Media Storage, and Sun Systems for MySQL Backup. Sun Systems for MySQL support the use of x64 (x86, 64-bit) or SPARC architectures, Solaris operating system, OpenSolaris, Linux, or Windows environments. The Sun Systems for MySQL start at \$1,200.

■ Sybase ASE Cluster Edition For AIX And HP-UX

Sybase has announced next month's availability of its ASE (Adaptive Server Enterprise) Cluster Edition for AIX and HP-UX systems, thus expanding the number of products and platforms tied to ASE Cluster Edition that have support for Unix. ASE Cluster Edition 15.0.1 is currently available for RedHat Enterprise Linux 4/5 (X86_64), 64-bit Solaris 9/10 on Sparc platforms, and

Product Releases

Continued from Page 17

business needs while reducing the total cost of ownership and enhancing disaster recovery capabilities. Online data migration allows storage administrators to redistribute application data to improve performance and move data to lower-cost storage without disrupting business operations. Thin provisioning allows customers to purchase less storage hardware up front and add capacity as their enterprises grow. Data replication improves disaster recovery and facilitates data backup capabilities. The HP SVSP separates data flow from management processes. The HP StorageWorks SVSP is expected to be available next month.



■ NetApp FAS3160 & V3160

NetApp released two new storage systems, the FAS3160 and V3160, targeted at midsized enterprises. The FAS3160 is a midrange storage system that features the Data ONTAP operating system, thin provisioning, deduplication, RAID-DP, and FlexClone features. The NetApp V3160 also features Data ONTAP and supports deduplication and disk arrays from other vendors, including EMC and HP. NetApp also announced support for 8Gb Fibre Channel, enterprise flash solid-state drive storage, and flash-based caching modules for all of its FAS and V-Series products. The 8Gb module will be available in

February 2009, and the first flash plug-ins will be available in Q2 2009.

■ NovaStor NovaBACKUP10

NovaStor has updated NovaBACKUP10 to include features, such as Basic Mode, that cut back the number of available modes to four. Basic Mode will now only include Backup, Copy, Restore, and Disaster Recovery. Advanced Mode has been introduced to resellers in order to help them find the best data protection setup before turning it over to Basic Mode. Job Summary is a new feature that presents the settings of the existing backup and helps users navigate through the data protection process. All of these new and updated features are designed to improve the usability of NovaBACKUP10.

Plasmon

■ Plasmon Archive Appliance Version 4.11

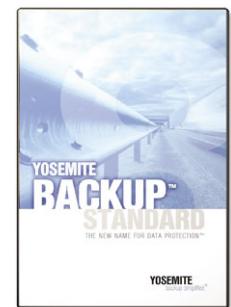
The UDO Archive Appliance is getting some new features, according to manufacturer Plasmon. The company has announced Archive Appliance 4.11, which adds support for remote monitoring and access. Also new is UDO Guard, an enhancement that password-protects removable media as part of an overall security plan. With version 4.11 software, the RAID cache limit has been increased from 2 to 4TB, and there's even a performance boost to be realized.

■ Seagate Savvio 15K.2 HDD

Seagate introduced what it is calling the world's fastest and greenest drive, the Savvio 15K.2 HDD. The new 15,000rpm addition to the Savvio family of 2.5-inch

SAS 2.0 enterprise solutions, Savvio 15K.2 HDD delivers the industry's highest hard drive performance and reliability, adds a self-encrypting drive option, and maintains record low power consumption. The Savvio 15K.2 HDD is offered in the server capacity of 146GB and 73GB with a SAS 2.0 interface running at 6Gbps speeds.

Savvio 15K.2 hard drives are ideal for RAID configurations and provide up to 115% greater system-level performance when compared to systems based on 3.5-inch server-class drives. With Seagate's onboard PowerTrim technology, Savvio 15K.2 drives reduce power consumption up to 70% over comparable 3.5-inch 15,000rpm drives. The Savvio 15K.2 HDD uses AES (Advanced Encryption Standard) government-grade encryption, enabling protection of information throughout a drive's life cycle. The Savvio 15K.2 HDDs are available with optional SED (Self-Encrypting Drive) technology and provide government-grade data security. Seagate expects to begin shipping the Savvio 15K.2 drives next month, with models featuring SED expected to be available during the first quarter of next year.



■ Yosemite Backup 8.7

Yosemite Technologies has released version 8.7 of its Yosemite Backup software. The company says key improvements include quality, reliability, and ease of use. Features include enhanced usability, including support for booting the app from a removable disk drive; platform support for Vista, Windows Server 2008, and Hyper-V (with full VSS support); SAN and scalability features; shared device and SAN support bundled with Media Server; and unlimited Media Server additions to a Yosemite Backup domain. Backup 8.7 also has ADLDS and DFS support for Windows 2008 Server and SharePoint 3.0 SP1 and Exchange 2007 SP1 support. A 30-day free trial is available.

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CLIENTS

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Rugged Mobile Computing Intermec CK3

Every enterprise seeks to lower expenses and streamline business practices; for data capture and communication applications, Intermec has introduced the CK3 mobile computer to facilitate these improvements.

Primarily intended for warehouse operations, the handheld CK3 incorporates a number of features designed for highly adaptable data, image capture, and secure wireless capabilities. The CK3 includes 1D and 2D barcode scanning, which can be accomplished either up close or far away, regardless of the lighting situation. It can

also scan damaged or low-quality barcodes.

The CK3's wireless features include an 802.11a/b/g wireless LAN with CCX (Cisco Compatible Extensions) certification and support for VoIP and Bluetooth. Other features include speech recognition, an optional RFID reader, and support for integration with Intermec's PB42 receipt printer, PB50 label printer, and other mobile printers.

Intermec's TE 2000 and iBrowse software come packaged with the CK3, which operates on the Windows Mobile 6.1 platform.

TE 2000 uses terminal emulation and supports multiple host sessions, security, session persistence, and a complete set of data collection options. iBrowse is a data collection browser that does the job yet limits its users to only preapproved Web sites.

With Intermec's SmartSystems technology, users can streamline IT tasks and reduce costs by installing software, configuring settings, and remotely connecting to the network. The CK3 also has several accessories including docking stations, an attachable handle, and an IP30 handheld RFID reader.

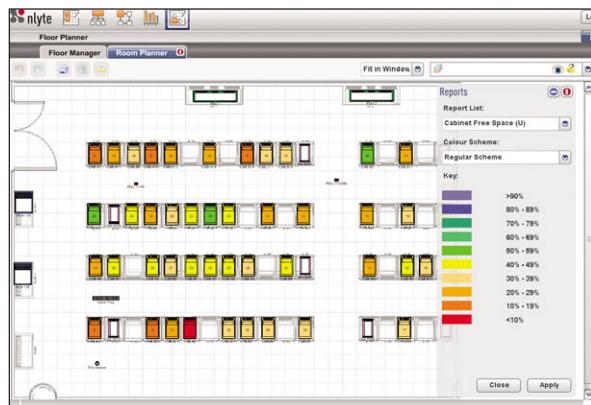
The Intermec CK3 is a rugged, handheld mobile computer designed for industrial-class applications, data capture, and communication.

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Data Center operating budgets have been hit hard as energy costs continue to rise. The complexity of the data center and the interrelationships between the assets and the applications they serve demands a management solution that understands the current state of the environment and provides the ability to plan and model for future needs.

Built by data center professionals for data center professionals, the nlyte® suite from GDCM (Global DataCenter Management) optimizes data center assets by visualizing, monitoring, and modeling current and planned changes to this critical infrastructure. The software provides immediate feedback on planned and implemented changes to facilities, racks, servers, cabling, power connections, and other assets and resources. With a few clicks, nlyte can supply users with the data they need to identify important trends or analyze how planned

changes will impact redundancy, power, cooling, space, network, and cable capacity.

The nlyte suite's auto-allocation capability removes the guesswork of finding the best rack for new server placement and, in many cases, can recover unused rack capacity, delaying or eliminating the need to expand the existing facility. The nlyte workflow module can help establish standard policies and procedures for data center operations, reducing implementation time and eliminating costly mistakes.

Companies using nlyte are seeing significant reductions in costs related to power, space, and human capital, with an ROI of less than 12 months depending on installation's size.



Extend Your Copper Network's Reach

Transition Networks Media Converter Offers Solid Option



ARE YOU looking to extend the reach of an existing copper network? Trying to alleviate copper cabling congestion? Addressing EMI/RFI interference within your data center?

The Plug & Play Universal Systems Media Converter Module from Transition Networks lets you gain all of the benefits of a fiber-optic infrastructure and the advantages of a preterminated, modular solution, all while using the low-cost legacy copper electronics currently available.

A jointly marketed venture between two industry leaders—Transition Networks and Corning Cabling Systems—the Plug & Play Universal Systems MCM (Media Converter Module) is a Gigabit Ethernet (1000Base-SX) media conversion solution within a Plug & Play Universal Systems. Each Media Converter Module is configured with 12 modular RJ-45 ports on the front and two MTP Connector ports on the back. Each

port on the MCM converts a Gigabit Ethernet 1000Base-T signal-, transmitting over copper-, to a 1000Base-SX signal-, transmitting over fiber. Media Conversion Modules are powered by redundant power supplies. An optional remote management module is also available to alert network managers of a power supply failure or fan fault.

Whether using two modules in the 1U housing (24-port capacity) or up to eight modules in the 4U housing (96-port capacity), the MCM provides the highest density media conversion solution available. Using the Media Converter Module lets you reap all the benefits of installing a modular MTP connector-based fiber cabling system, while leveraging your existing copper-based electronics.

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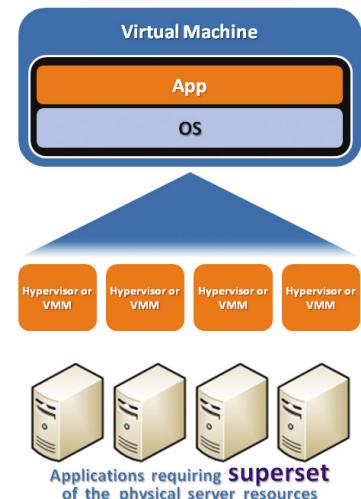
For IT organizations that find high-end servers too expensive and are fed up with the complexities of setting up and managing clusters, there is a new innovative technology on the market that can solve these user problems.

The innovative Versatile SMP™ (vSMP) architecture from ScaleMP aggregates multiple industry-standard x86 systems into a single virtual system, delivering a high-end SMP computer. The ScaleMP vSMP Foundation aggregation platform creates virtual systems ranging from four to 32 processors (128 cores) and up to 1TB of shared RAM. It is optimized for compute- and memory-intensive workloads, making it ideal for the high-performance computing market. It provides a single virtual system across multiple nodes of a cluster or blade server system, dramatically simplifying installation and ongoing management. It delivers the operational simplicity of traditional SMP systems while maintaining the low acquisition costs associated with clusters.

The ScaleMP vSMP Foundation Standalone software can be used to run extremely large jobs, models, and simulations, even with a single process; with up to 1TB of RAM, it fits most of the large simulations in the industry. By providing up to 128 cores of processing power, parallel applications significantly improve performance and run time; they use different parallelization models such as threaded, OpenMP, and MPI with the highest performance.

vSMP Foundation Standalone is used in a range of high-performance and technical computing applications.

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OPINIONS

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IT Metrics: Now More Than Ever

A colleague of mine said a few weeks ago that IT staffing ratios are, in and of themselves, virtually meaningless. After a spirited debate on the subject, I got to thinking about IT metrics in general. Then I started seriously researching them. What I found was a curious mix of revelation and tired old rhetoric: IT metrics are useful, practical, and increasingly meaningful in times of economic want and woe.

My Karma Ran Over Your Dogma

I often speak with clients about governance issues such as the measuring of IT performance. When it comes to metrics, IT managers usually fall into one of two camps: those who see the value of metrics and those who don't. The latter group equates the value of metrics with Bigfoot: Sure, they've heard about it, but who has ever seen it?

Much like *Homo sapiens*, enterprise technology infrastructure also evolves. As the number of business applications increases, so too does the perceived business need to measure and control IT's quality and efficiency. If this oversight does not occur, then the business is most definitely going to view the IT department as a budget black hole.

With economic uncertainty and budget cuts as the norm, IT is going to be under greater pressure than ever to deliver more and better services at a lower cost. Metrics therefore become a powerful management tool that can be used to maintain and improve IT effectiveness in light of internal and external business drivers.

What's A Metric, Anyway?

Simply put, a metric is a measurement of an activity, process, deliverable, or resource. IT metrics take the following fundamental perspective: In order to manage something, it is necessary to measure it first.

Companies use IT metrics in a variety of ways: to help estimate projects, to measure the progress and performance of IT staff and activities, to assess software quality, and, above all, to communicate IT performance and progress to the business. Generally speaking, any IT function that contributes to the organization's goals can be measured and managed using metrics.

The metrics themselves can be operational or financial in nature. Typical examples of operational metrics include application development (average number of feature requests per month), data center (average number of servers per systems administrator), or help desk (percentage of first-call ticket resolutions).

Traditional financial metrics include operational expenses (IT operational spending per company FTE), capital expenses (capital IT budget as percentage of revenue), revenue (IT budget as a percentage of company revenue), or project management (percentage of projects delivered on budget).



ROSS ARMSTRONG

AUTHOR Ross Armstrong is a senior research analyst with Info-Tech Research Group, a London, Ontario-based research and professional services firm focused on providing premium research and advice geared to the unique needs of IT professionals of midsized enterprises. Armstrong holds a master's degree in English from the University of Western Ontario and has extensive experience in IT technical writing and automotive writing. He is also the author of the Info-Tech Research Group guides "Securing Your IT Environment" and "Moving: An IT Perspective."

balance and will likely not be aligned with business objectives.

The ideal approach is to build the metrics program from a top-down perspective. The challenge here is defining the metrics to track and then linking them to details or data that is readily available. The key to success is to avoid taking on too many metrics. Management should choose only five or six

metrics to start with and only choose those that will deliver the greatest alignment with corporate goals and objectives.

Actual metrics design, data collection methods, and tracking techniques are far too complicated for our purposes in this note. Suffice it to say that metrics should be tracked for three or four months. It's at this point where IT and business leaders need to decide if the metrics deployed are indeed meeting their intended objectives. If not, they must be revisited.

Finally, the results of the metrics must be used to make informed decisions about the direction of IT within the organization, along with any fiscal changes to technology spending.

Final Thoughts

Common objections to IT metrics are that they are too costly to implement, there aren't enough people to manage them, or that the company is too small to justify a metrics program. To those gripes, I say this: Once implemented, metrics have low ongoing costs, require minimal human intervention, and are applicable to any enterprise seeking a proactive way to improve on IT services.

IT was, is, and always shall be on the hook to prove its value to the business and demonstrate alignment with company goals. Metrics will help you do that. So you can either get on the bus or stick your head in the sand. It's your call. □

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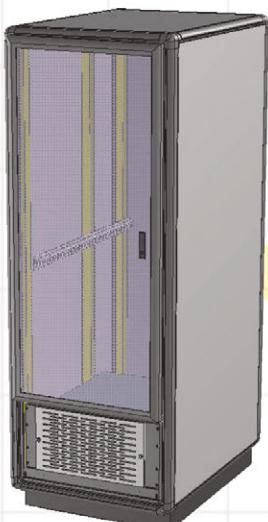
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Getting Green For Less

Advances In Technology Will Help Green-Up SME Data Centers

by Curt Harler

• • •

IT'S NOT EASY being green, but both new research and established programs can help small to midsized enterprises make their data centers greener. Being environmentally conscious, both through boosting energy efficiency and purchasing green products when possible, will help SMEs be both cool and green at the same time.

Energy Efficiency

Saving power is one green goal enterprise data centers are increasingly concerned with. While he maintains that a green data center is "a bit of an oxymoron," John Consoli, CTO for AFCO Systems (631/249-9441; www.afcosystems.com), says there are important things that can be done to be a better steward of energy as a whole.

"Mission-critical data centers are provisioned for twice the power they will need to provide backup, so, naturally, efficiency can suffer," he says. He says the first step an SME should take to help green-up a data center is to measure its energy use at as granular a level as possible.

"It is vital to have a method and process for monitoring the amount of power that is actually being used by the computers," Consoli continues. "You need to get your

Power Usage Effectiveness (PUE) score so you can get to the next step. This allows you to know what areas you need to manage more aggressively—what leaks to plug."

This requires establishing and instituting a method for real-time monitoring. "You need to know where you are before you can get to where it is that you want to go," Consoli says. "Once a benchmark is set, a PUE goal needs to be established—many of our clients are aiming for 2.0 or better."

PUE is calculated by dividing the Total Facility Power (what's on the electric bill) by the IT Equipment Power (what is being used by the computers). "This is a process, not a snapshot," Consoli says. "Conditions change. Once your center has been brought under control, you want to maintain it through ongoing monitoring and management."

Another good place to start monitoring and management is with intelligent power strips, especially those that provide for outlet-level monitoring. For more information on monitoring energy use, see "Tracking Energy Consumption" on page 24.

Energy-Saving Tips

After getting a handle on how much energy your data center and enterprise use, Consoli says there are several energy-saving processes you can implement, or at least consider implementing, right away.

Start by making sure you have a process in place to turn off equipment that is not being used. "Since few companies have a process for decommissioning obsolete IT equipment

Go to Page 24

Rating Energy

While a data center energy rating sounds good in theory, be sure to consider which rating authority your enterprise uses.

"The Energy Star label may not be right—it's a consumer-oriented program," says John Consoli, CTO for AFCO Systems (631/249-9441; www.afcosystems.com).

However, he says, using The Green Grid's measurements of the Power Usage Effectiveness, where a data center's power is measured by the amount of electricity devoted to the computers as a function of the total DC power requirement, might make for a compelling way to rate a data center.

The Green Grid score is a bit like a golf score. "The lower the number, the better the efficiency," Consoli says.

Consider Green Products

With all the hype over enterprises greening-up by reducing power consumption, enterprises often don't think about extending their green efforts to the entire business by buying green products.

In one example, research done by a group of Ohio soybean farmers promises to make the printing process at many SMEs more environmentally friendly. The farmers supported research at Battelle Memorial Institute in Columbus, Ohio, to develop

environmentally friendly, bio-based soy toner.

"It has two real advantages," says Rick Heggs, senior market manager for bio-based products in Battelle's Advanced Materials Applications group. "It's based on a renewable resource, and it takes less energy and chemicals to de-ink the paper when it is recycled."

Americans make about 3 trillion copies annually with their photo-

copiers and printers. Those print-outs consume 400 million pounds of petroleum-derived toners and resins annually. The advantage of the soy-based toner—in addition to reducing consumption of petroleum—comes at end-of-life when the paper needs to be de-inked. Soy inks are easy to remove from fused images during secondary fiber recovery in a paper de-inking mill. This makes recycling simpler and less capital-intensive for mills to de-ink paper for recycling.

"There is a great market opportunity for soy-based toners and resins," says Stuart Conrad, co-manager and CFO for AIR, which will commercialize the soy-based toner. "Soy-based options have been around since the 1980s," Conrad says. However, there was no driving demand for them until the 1990s. The dry-toner technology developed at Battelle and being marketed by AIR is the first of its kind in the laser printer and copier industry.

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Enterprise Asset Management

Inventory & Track IT Assets Smoothly With The Right Automation Tools

by Kurt Marko

KEEPING TRACK OF IT assets, whether servers and PCs or software licenses and support contracts, is a necessary but tedious bureaucratic chore that most would rather avoid. Yet given the importance of IT assets, effective resource tracking is one of those unpleasant tasks that can't be avoided.

The effort required to manage assets is highly dependent on a company's size and organizational complexity, but most analysts concede that enterprises with more than a few dozen systems have outgrown manual methods and must consider systematizing and automating the asset management process.

Different Forms Of IT Asset Management

IT asset management is often partitioned between hardware and software with tools and processes customized for each domain. Over time, hardware asset management has become more structured and formalized and, according to Gartner analyst Peter Wesche, more like what's done to track other industrial machinery. Thus, IT may end up sharing responsibility with corporate procurement or finance departments for completing hardware asset audits. With growing infrastructure, most IT departments deploy automated tools for network and server management. These management platforms have become the ideal foundation for automating hardware asset management, according to Vince Londini, research analyst at Info-Tech. SMEs that already have deployed systems management software may find that they include some basic asset auditing capabilities or can be augmented with optional extensions that automate hardware asset management.

SAM (software asset management) products are designed to track, monitor, and audit the purchase, deployment, and use of an enterprise's installed software on both clients and servers. "SAM is more than building an inventory of executable files on all servers and workstations," says Londini. "SAM starts with the inventory, extends into monitoring, and touches on enforcement" and should incorporate both

an automation tool and a defined audit process. Londini notes, "A lot of shops try to perform SAM on the cheap by lubricating basic configuration tools with lots of manual labor. The resulting process soaks up a lot of time, results in a smoky view, and ends up sliding into a request for proper processes and tools."

According to Londini, all SAM tools worthy of the designation need the ability to inventory and audit software usage but should also be able to monitor usage over time and enforce licensing policy, whether through passive notification to IT of license violations or active, automatic eradication of unauthorized or unlicensed software.

Comprehensive asset management suites are available from the major systems management vendors and are designed for large enterprises with multiple business units, thousands of employees, and hundreds of software titles. These products manage both hardware and software, along with procurement, contracts, and IT services. An advantage of these mega-suites is the consolidation of asset information into a single repository; however, they are costly and complex to implement and require dedicated, trained employees in order to run effectively. Smaller organizations are advised to

of the same coin; in the first instance, companies have more software licenses than they need, and in the latter, they don't have enough. He notes that many enterprises lack adequate software purchase controls and thus find themselves with too many licenses or renewing licenses on software they no longer use. "[SAM] metering functionality helps companies monitor software usage and identify potential cases of over-licensing and unused software," Londini says. "Enterprises can reduce licensing and maintenance costs by identifying underused software assets and redeploying or eliminating them."

On the flip side, having too few licenses poses legal risks. According to Londini, "SAM tools strengthen ongoing license compliance efforts and help reduce the risk of audits, possible legal ramifications, and associated fines." Though he admits that the potential for external audits is rare, he cautions that there are industry watchdog groups monitoring for software piracy that sometimes are tipped off to lax licensing controls by disgruntled employees or contractors.

When Do Tools Make Sense?

While software tools levy costs for acquisition, employee training, and implementation—Gartner estimates 3 to 5% of the total software budget—it doesn't take much to outgrow a manual, spreadsheet-

Software asset management products track, monitor, and audit the purchase, deployment, and use of an enterprise's installed software on clients and servers.

stick with special-purpose SAM solutions. "These are always better than nothing and certainly better than something more complicated that's not implemented properly," says Wesche.

Motivations For Software Asset Management

According to Londini, there are two primary rationales for automating software asset management: cost control and risk mitigation. In a sense, these are two sides

based asset management system. Wesche notes that even SMEs with as few as 20 desktops may find a SAM system advisable if each employee runs a multitude of applications. While he and Londini are reluctant to cite a hard threshold for SAM implementations, both say enterprises with 100 or more users should strongly consider one.

Smaller, Microsoft-centric enterprises should start by evaluating one of the SAM add-ons that hook into Microsoft's System Center or SMS, according to Londini; larger organizations that are more heterogeneous will want to look into dedicated SAM applications. An alternative to deploying an internal SAM solution is one of the several hosting providers that provide online SaaS (software as a service) SAM solutions. However, Londini cautions, "Web-based SAM tools require enterprises to let their software licensing information leave their physical network. While outsourced software services are becoming more popular, enterprises may be reluctant to share licensing audit information for fear of litigation if the information is leaked."

Given the financial stake most enterprises have in IT infrastructure and applications, fastidious asset management is a key responsibility. With the potential for wasteful overbuying or legal liability from unlicensed software, SAM is one area not to neglect. Though manual processes may suffice for small firms, larger IT shops will find the benefits of automated asset management compelling, much like retail stores that have abandoned price stickers for bar codes and product databases. □

What Is Software Asset Management?

According to the ITIL (Information Technology Infrastructure Library), SAM (software asset management) is defined as "all of the infrastructure and processes necessary for the effective management, control, and protection of the software assets . . . throughout all stages of their life cycle." An essential part of today's business world, SAM protects an organization's software and helps IT recognize what it has, where it's running, and any licensing overlap. SAM typically supports several key IT processes: software inventory, software metering, application control, software deployment, and patch management.

Implementing SAM can be relatively simple, often via four basic steps:

- **Perform a software inventory.** Begin by taking a survey of all the software installed on your company's PCs, workstations, servers, and other devices and collect the information in a report. You can choose to do this manually,

or you can use a software inventory tool to perform an inventory automatically.

- **Match software to licenses.** Once you've identified which software titles you're using, the next step is to match your license documentation to the software itself. It will be easy to see if you are over- or under-licensed for certain software titles.
- **Review policies and procedures.** Now that you've identified what you have and where it is, the next step is to review and/or write policies and procedures that your employees can use to ensure proper software asset management. Sample topics may include software acquisition, deployment, use, and recovery.
- **Stay the course.** The final step is to establish an ongoing plan, construct a library for your media licenses, and keep your company's documentation up-to-date.

Survey Shows Impact Of, Reaction To Security Policies

Almost all organizations have a security policy put into place by their IT department, but an astonishing number of employees around the world defy these policies. A new study conducted for Cisco by Insight-Express examines the reasons why employees don't always follow these security policies, and the research suggests that communication (or lack thereof) between employees and IT departments could have a large impact on how employees react to and comply with security policies.

According to the results of this study, the communication disconnect between IT departments and employees starts with how security policies are communicated to employees. Oftentimes the IT departments will communicate policies via nonverbal means, such as email or paperwork on an employee's first day.



Fred Kost, director of security solutions marketing for Cisco, says the keys to bridging the communication gap between the IT department and the rest of the staff are education and means of communication.

"Those policies are usually put into place to protect your data and to do the right thing for the company and not so much to punish employees, but try to give them guidance on the right behaviors," says Kost. "So, I think that making sure they know there is a policy and educating them on the components of the policy is important."

Why Defy?

When United States-based employees surveyed were asked why they choose to defy the security policies in place, 27% said it was because the security policies were not in alignment with the reality of what it takes to do their job. Others said it was because they sometimes forget the policies, the policies are not convenient, and employees have seen others defy the policy so they do not feel that they need to comply, either. The majority of IT personnel surveyed said that they believe employees disregard security policies because employees believe they do not think there is a big enough risk to be concerned.

Kost says employees and IT administrators need to get on the same page for those policies to work.

"It may be that IT needs to revisit their security policy potentially more frequently," Kost says. "We live in a fast-changing world. There's a lot of new business applications introduced, and businesses are moving fast. They're turning up new ways to engage with customers," he says. So IT should respond by "reviewing security policies, making sure they are still relevant and aligned with the business, and also getting those businesses involved and understanding what users need to do to get their job done."

Sluggish Economy To Slow Cisco

Though its Q1 revenue just slightly topped analysts' predictions, Cisco Systems' second quarter is expected to take a turn for the worse due to a decrease in sales of about 9%. The company anticipates that current sales will continue to decline between 5 and 10%, in part because of an overall drop in technology spending. Cisco CEO John Chambers intends to cut down on expenses next year by \$1 billion by freezing hiring, realigning the company's resources, and reducing the amount of business travel within the company.

Trojan Horse Wreaks Havoc

A particularly heinous Trojan horse, alternately named Sinowal, Mebroot, and Torpig, has been discovered and tracked by RSA Security's FraudAction Research Labs. The authorities speculate that the Trojan horse, which has stolen login information from about half a million online bank accounts, may have originated from Russia due to a conspicuous absence of attacks in that country. Sinowal has been meticulously maintained by its creators and is thought to have existed since February 2006.

Flash Memory Prices Plummet

In a market expected to consistently grow by high percentages, the sudden downturn in the flash memory market is something of a surprise. Projected revenues look to fall 14% year over year, with another expected drop of 15% over the next year, according to iSuppli. The falling prices are related to the decline in consumer spending, as most flash chips end up in personal media devices. Other types of memory have a firm foothold in both the consumer and nonconsumer markets and therefore won't suffer as much.

DoS & VA Report Data Breaches

Two federal agencies have reported more data breaches: The U.S. DoS (Department of State) disclosed that the passport applications of 400 individuals have been stolen, and the U.S. VA (Department of Veterans Affairs) announced that an Oregon VA medical center inadvertently posted personal data, including names and some Social Security numbers, for about 1,600 patients. This is the second major slipup for the DoS, which made headlines in March for

a breach in which contractors for the agency rifled through the passport records of prominent citizens. For the VA, this incident follows a 2006 laptop

theft that left more than 26 million veterans and 2.2 million members of the National Guard and Reserve vulnerable to identity theft.

FCC Approves Use Of White Space

After a protracted six-year deliberation, the FCC (Federal Communications Commission) has unanimously decided to open unused TV spectrum, known as white space, to the public. Google and Microsoft, proponents of the open white space plan, lauded the decision as a boon for new technology that is capable of improving broadband networks and making smarter mobile devices. The white-space spectrum offers significantly better range than current Wi-Fi, which could lead to improved coverage and lower-cost access for consumers. Skeptics fear that free public access to the spectrum could interfere with existing TV broadcasts, wireless microphones, and other devices. In October, the FCC reported that interference is not a major problem and that technology using the white space must be able to "listen" for other wireless devices to ensure there's no interference.



Tracking Energy Consumption

Intelligent Monitoring Can Cut Costs & Boost Server Room Capacity

by Bruce Gain

• • •

IT IS IN THE INTEREST of admins to seek ways to reduce energy consumption, whether the goal is to save electricity costs, squeeze more server capacity out of the data center, or make your IT infrastructure more environmentally friendly.

At the same time, energy consumption per square foot of general office space is decreasing, because of LCD screens and other initiatives, which draws more attention to the electricity use of the IT infrastructure, says Michael Petrino, vice president of PTS Data Center Solutions (201/337-3833; www.ptdcs.com).

"We see the watts per square foot increasing in the data center at a much higher rate [than general office space] due to high-density computing," Petrino says. "In many cases, the data center increase far outweighs the savings from the office space."

Keeping Tabs

As electricity prices continue to rise and data processing demands increase, admins are increasingly expected to somehow squeeze energy cost savings out of existing data center infrastructures. In short, the pressure is on to do more with less.

The good news is that it is possible to reduce electricity costs through better energy consumption management. To do that, you need to accurately determine just how much your IT infrastructure energy costs really are by implementing an effective monitoring process.

In practical terms, tracking energy usage lets you identify where the most power is consumed and where to focus on saving energy, says Fred Miller, product line

manager of the critical power solutions division at Eaton (www.eaton.com). "Cost savings can add up quickly once the waste is eliminated. Also, you may realize additional capacity, which could prevent the need to add expensive equipment," Miller says.

A Reasonable Investment

Tracking energy costs does not necessarily require huge investments in new systems or technologies. The end result often varies little, whether you use a tried-and-tested tracking process or cutting-edge technologies. While some high-end systems might be appropriate for larger networks with about 1,000 users, smaller data centers will often have less expensive needs for energy monitoring.

"Whether using the low- or higher-tech way to get your electrical readings, the goal is the same. [In either case,] you can calculate how much power you are using and what capacities remain so you can accurately assess your facility to see if you can meet your future company growth requirements, along with being able to have a better understanding of the operational costs for powering your equipment," says Brad Kowal, assistant data center director for Shands HealthCare in Florida. "Small businesses typically don't have a large operating budget to draw from, so any large-expense items that creep up impact the business' ability to compete while drawing precious funding away from R&D or marketing."

There are alternatives available that only cost a few extra dollars that you can implement "to get true electrical load numbers," Kowal says. "A low-cost alternative that anyone can do themselves would be to pur-

chase an inexpensive watt meter and measure the true load for each piece of equipment. The downside is each server must be disconnected to be metered."

Kowal says the preferred system for his data center is an intelligent PDU installed in each rack. "[This system offers] the ability to monitor electrical load [in] real time without the risk or need for downtime," he says.

The Starting Point

Once you decide that more aggressive energy consumption monitoring is necessary, where do you start? Kowal recommends first using the services of an electrician to test the data center equipment's electricity feeds with an ammeter. "This will allow you to calcu-

The Power Guzzlers

Energy monitoring, among other things, should help you to determine which equipment and systems are power guzzlers. In general, the equipment and systems that consume the most electricity in a data center are the servers themselves, the HVAC system, and software applications. Analyzing the usage patterns of this equipment can allow you to take action to reduce their energy use.

"[Enterprises] should implement a means of lowering energy consumption and regularly monitor their progress with power consumption monitors," says STRATO CEO Damian Schmidt (www.strato.com). "You should assess your energy consumption as well as major energy users."

late your true electrical load and see if there is any additional circuit capacity remaining to meet future demands," Kowal says.

A starting point might also involve testing the power rating of all of your IT infrastructure's equipment, Eaton's Miller says. "[After testing the power ratings,] you can leverage products such as enclosure power distribution units that allow you to measure power consumption and [offer] a high-level summary down to the individual server level. [The units] give a complete understanding of power distribution within the data center," Miller says. "Once initial measurements are taken, you can understand where you can conserve or better manage energy usage."

Taking power consumption readings individually for hundreds of outlets is, needless to say, time-consuming. But a system that automates the process can make life a lot easier. A single system can allow you to analyze branch circuit consumption to determine which equipment or servers are using the most power and how power is used over time. "If you have the funds, install a branch circuit metering to allow for live-time monitoring of all your circuits," Kowal says. "Having the load data is key to being able to manage today and predict tomorrow's power requirements. You will be able to see how virtualizing your systems directly correlates over to reducing your electrical load and thus reducing your operational, electrical, and cooling costs." □

Putting It All Together With Consolidation

Admins might use many different systems to record their power monitoring data, from old-school methods such as noting readings down on paper to more sophisticated means. At a minimum, it is a good idea to at least save the data in Excel spreadsheet files, says Michael Petrino, vice president of PTS Data Center Solutions (201/337-3833; www.ptdcs.com). Another alternative is to use energy consumption

monitoring applications to gather and store data from Web/SNMP devices that allow "data to be sorted and reported as needed," Petrino says.

The information you gather will enable you to decide which servers to consolidate, such as when you might have several inefficient dual-core processor servers eating up a lot of power and requiring more energy to cool that can be

replaced by a single, large server with more efficient processor technology.

"Why have 10 1U (dual-CPU) pizza boxes running at 20% CPU load for a total electrical load of 3,200 watts when you can consolidate into a single (quad-core processor) virtual server running all 10 servers virtually with the processor at an [80% load] using 979 watts?" Kowal says.

Getting Green For Less

Continued from Page 22

(and the associated cabling), it's not really surprising that a significant amount of power is being consumed by servers that are not being used," Consoli concludes.

Consoli also says that perhaps the industry's ingrained belief that all servers and switches must have dual power supplies needs to be rethought. "If an application that is running on a particular server will be picked up by a redundant server in the event of failure, why must the first server have dual power supplies?" he says.

In addition, Consoli says, consider how much power your data center could save by

migrating back to single-corded equipment. Consoli says, "Is there really a risk associated with doing so?" One way to find out is by occasionally checking the power draw on all equipment for a constant period.

Saving In The Server Room

Another place to save energy is in the server room. Two strategies pay off: virtualization and efficient blade servers. Virtualization provides more memory, more I/O, and a fast, reliable solution that saves both power and all the ancillary costs of building footprint, says Jim Ganther, director of marketing for blade servers at HP.

Blade servers have the potential to reduce costs. Newer blade architectures let IT closely match power availability and actual power consumption. "Between 58% and 65% of data center operating expenses are from power and cooling," Ganther says.

Careful monitoring of demand allows enterprises to reclaim the energy lost by over-provisioning. What Ganther calls dynamic power capping lets IT set the amount of power a server can pull at the enclosure level. "Set a power cap, and no server will ever go over that cap," he says.

Ganther says this allows IT to operate 23 units with the same power budget as seven or eight. Solid-state servers also help. "A solid-state drive uses 90% less energy and has nothing to break," says Ganther. □

How To

Migrate To 10 Gigabit Data Center Infrastructure

Upgrading Can Be Straightforward, After You've Assessed Your Readiness

by Jean Thilmany

• • •

IF YOUR DATA CENTER has fairly recently upgraded to Gigabit Ethernet or Fast Ethernet and is already eyeing a move to the 10Gb Ethernet standard, don't feel bad. You're not alone.

Bandwidth needs continue to skyrocket. And for enterprises looking to adopt bandwidth-intensive technologies such as VoIP, streaming audio and video, or server virtualization, 10Gb Ethernet becomes that much more attractive.

Server virtualization forces the traffic from multiple virtual machines through the resources of a single physical server, gobbling up bandwidth in the process. And everyday applications such as streaming video can also slow down data center functionality.

But take heart. Migration to 10Gb Ethernet is particularly easy because IT staffers have usually already upgraded to Gigabit Ethernet and Fast Ethernet and know what to expect, according to Charles Thompson, manager of sales engineering at Network Instruments (www.networkinstruments.com).

Assess, Determine & Then Dive In

Upgrading to 10Gb Ethernet is a matter of assessing the need, determining switching and cabling needs, figuring out where to start, and then diving in and doing it.

The advantages of 10Gb Ethernet are many. IT staff requirements are reduced, and power consumption is cut because the network operates more efficiently, says

Thompson. But don't hop on the bandwagon just because everyone seems to be upgrading, he cautions. Before blindly implementing, determine if your company really needs to migrate to the standard.

The cost of 10Gb Ethernet—as measured in necessary interfaces and related technologies—may not be dropping as fast as some industry watchers had anticipated, Thompson says. Factor in costs for cabling, switching, and network interface cards when deciding to upgrade.

"What is your cost per port? You'll need to figure that out," Thompson says. "That way you can ask yourself, 'Do I need to upgrade now vs. waiting six or eight months when theoretically costs will drop?'"

He recommends calling upon a network-monitoring application to assess user response times and network use. "Maybe you'll see your utilization levels are high and your response times are high, so you'd benefit from 10 Gig," he says.

"But you might see your utilization levels are low on 1-Gig connections while response times are still high. In that case, moving to 10 Gig won't help because available bandwidth isn't your problem," Thompson adds. "Your money could be better spent on improved servers or router capabilities rather than making the pipe fatter."

Hardware Costs

Should you choose to migrate, you'll need to identify costs for hardware related to the upgrade. For this, you'll need to determine which existing hardware will need to be

reconfigured or replaced, says Omar Sultan, solution manager for data center switching for the Data Center Solutions team at Cisco Systems (www.cisco.com).

"There's going to be some investment," he says. "You'll have to upgrade switches and some aspects of your server."

The 10Gb Ethernet standard supports only full-duplex links, which can be connected by switches. So you'll need switches

Key Points

Migrating to 10Gb Ethernet can be fairly straightforward for IT staffers who have overseen upgrades to Gigabit or Fast Ethernet. But you'll likely need new network switches and network interface cards and may need to consider cabling. First things first: Consider where to start, and then upgrade in stages for best results.

to connect network nodes. Half-duplex operation is not supported by the standard.

Ensure devices can interoperate by testing them before deploying 10Gb Ethernet devices, Sultan says.

But 10Gb Ethernet will allow you to unify your operations with fewer switches and less cabling, a cost-savings measure in itself, he says.

"A typical enterprise server has five to seven connections coming out of it: the network, storage, and maybe some dedicated to clustering and backup," he says. "For each of those connections, you're paying for cables and an interface card, and they all connect to a switch upstream."

Cisco offers a calculator to assess costs. It's available at www.cisco.com/cdc_content_elements/flash/dataCenter/nexus5k_tco_calc/cisco.html.

While mulling the hardware upgrades, you'll need to consider that the 10Gb standard, while not new, is still undergoing growing pains and market shake-out.

There are numerous alternatives for the physical layer—the means of connecting network devices at 10Gb Ethernet—but it's still too early to tell which physical layer standard will be accepted by the market. Meanwhile, you can use varied connection methods. The switches, for example, accommodate different physical

connectivity types. So if fiber connections are called for, you can try corresponding switch modules and network interfaces, Sultan says.

The 10Gb Ethernet pluggable interfaces are available in a number of form factors. The various form-factor options are optically interoperable with each other so long as the 10Gb Ethernet physical interface type is the same on both ends of the link, he adds.

The Cabling Question

Cabling is also an issue, and here the final word is also not in. From the time the 10Gb Ethernet protocol was first ratified in 2002 (using optical fiber to connect network nodes and switch ports), it's been amended several times to accommodate a variety of cable types.

You'll have to understand your existing cabling infrastructure to determine how it will fit with the protocol, says Iain Kenney, director of product marketing at SMC Networks (www.smc.com). Fiber-optic cable can be used for the protocol, while some copper cables may need to be connected via interfaces. For this, you'll also need to determine where you'll first implement 10Gb Ethernet. Many enterprises start within the data center, where you'll likely be able to best use your existing cabling, he says.

"Will you be running 10 Gig from server to server or out of the data center and maybe into distribution?" he says. "It's easy to address cabling concerns within the data center, but you'll want to keep cabling issues in mind as you move out of the data center."

The standard can be deployed over existing fiber cabling from the data center to the wiring closet uplinks, Sultan says.

Implementation won't be an all-or-nothing process. It may be years before 10 Gigabit Ethernet reaches to the ends of your enterprise—a distant distribution center or remote building, for example. And remember, even a data center upgrade may make for network disruptions and downtime, for which you'll need to plan. The best way to avoid a lot of downtime is to migrate to the standard in small phases, starting with the least critical links.

Usually, data centers and file servers see the upgrade first because higher-speed transmission lines there are needed for video transmission or multimedia streaming, Kenney says. Enterprises that deploy the standard will likely start in the core data center and gradually work their way to the edge of the enterprise, he adds.

The key word to migrating to 10Gb Ethernet is assessment, these experts say: Assess the need to upgrade and your switching and cabling needs. Then let the upgrade begin. □

TOP TIPS

- Determine your cost per port to migrate to 10Gb Ethernet.
- Assess actual network usage needs by using a network-monitoring device.
- Figure out whether you'll actually need to update cabling. If you're running fiber-optic cable, the answer is likely no.
- Plan for network disruption and downtime while you migrate.
- Before deploying new switches and devices to meet the protocol, test to ensure they interoperate.

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SIX QUICK TIPS

Buying Ruggedized Equipment

Keys To Success When Making Purchasing Decisions

by Sixto Ortiz Jr.

• • •

COMPUTING TECHNOLOGY PERVERADES every aspect of the modern business world. So it stands to reason that many times, electronic gear such as notebook computers, cell phones, and networking equipment must be used under less-than-optimal conditions.

A good example is the armed forces: GIs in today's technologically savvy armed forces often carry loads of electronic technology into war zones where conditions can put equipment to the ultimate test.

But ruggedized equipment is also used within many areas in the civilian world. For example, an insurance adjustor who must carry a laptop into disaster areas to perform his job needs a rugged computer that can perform under all kinds of conditions. As computing technology expands, the need for ruggedized equipment will expand, as well.

Determine What's Rugged

One of the keys to successfully buying ruggedized equipment is, of course, figuring out what rugged means in the first place. Sheldon Safir, director for mobile computing at Motorola's Enterprise Mobility business (www.motorola.com), says not all devices labeled "durable" or "tough" should be considered "fully rugged."

"If a device is labeled 'fully rugged,'" says Safir, "then it has been tested to certain industry specifications that rate devices for their ability to withstand temperature fluctuations, water, dust, humidity, shock, sun, and more."

Examples of ruggedized equipment manufacturing and testing specifications include

military specifications such as MIL-STD-810F, ASTM D 4169, and IEC 60529.

There are a number of tests to determine whether units can withstand vibration, temperature extremes, drops, shocks, dust, and moisture—all potential hazards a mobile computer could face, says Kyp Walls, director of product management for Panasonic (www.panasonic.com). There is a lot of flexibility in how these tests are performed, so it's important to read the fine print. If a computer's failure rate is higher than a few percentage points, the "rugged" claim is most likely embellished, Walls says.

Device manufacturers, says Safir, can describe the condition under which the device is expected to function. Safir says it's important to know if a device has been tested across the operating temperature range rather than just at ambient temperature. This is important if the device will be used outside and across a range of temperatures.

Also, notes Safir, buyers should ask whether the internal components of the device have been secured by rubber grommets to ensure shock resistance and whether the hard drive is flash-based and can withstand shaking or a hard drive that cannot. Buyers should look for devices compliant with MIL-STD-810F and ASTM D 4169 to verify shock and vibration resistance.

Another important factor is whether the equipment can survive drops. Jim Vercruyssen, senior product manager at General Dynamics Itronix (www.gd-itronix.com), says all rugged computer manufacturers publish a drop-height spec for their products. A rugged computer, Vercruyssen says, should survive at least a 30-inch drop to plywood

over concrete on all faces while the computer is operating.

Ruggedized Networking Gear

"Globalization is a worldwide trend that is causing enterprises and service providers to expand their network local area network (LAN) infrastructures beyond the traditional LAN campus footprint," say Hema Ganapathy, solutions marketing director, and Minka Nikolova, senior product line manager at Alcatel-Lucent (www.alcatel-lucent.com). Network admins who are expanding their networks must be aware of the areas where their network gear might be stored and in some cases may have to consider the purchase of ruggedized networking equipment.

According to Ganapathy and Nikolova, LANs are extending out of the office environment and into remote sites where operating conditions are environmentally demanding. In these locations, they add, network equipment must be able to withstand a range of operating temperatures and high levels of shock and vibration and operate continuously in harsh electromagnetic environments. Hardened, industrial-grade LAN switches built to meet these operating requirements are necessary in these environments.

Temperature Extremes? No Problem

One basic requirement for ruggedized equipment is the ability to use it outside and in a variety of temperatures and environmental conditions. For example, an insurance adjustor's laptop should be as responsive in extreme temperature environments as it is within a climate-controlled environment.

General Dynamics Itronix's Vercruyssen says a rugged computer should be able to boot up in the coldest temperatures of the region where it is to be used. Displays and hard drives, Vercruyssen says, are the hardest hit by cold temperatures, so most rugged computers have auxiliary heaters that help these items boot the computer at the lowest possible temperature. In fact, Vercruyssen says, all rugged computers should be capable of booting at temperatures below -20 degrees Celsius.

Resistance To Dust & Water

Dust and water are two things that don't mix well with electronic equipment. So it's important for rugged equipment to be fairly impervious to these substances.

Most User-Friendly Tip:

Don't Forget Ergonomics

Buyers of ruggedized equipment, says Sheldon Safir, director for mobile computing at Motorola's Enterprise Mobility business (www.motorola.com), should consider equipment design as it pertains to ergonomics. For example, he adds, equipment in a factory environment where two hands are needed to do the work should not require a worker's hand to be constantly programming or interacting with the device.

Ruggedized equipment, adds Safir, is designed for its use case; for example, workers using devices to count large volumes of goods should use a computer that fits comfortably in the palm of the hand and does not stress the fingers every time a button needs to be pressed on the device. Safir says that some devices can even be wearable, allowing workers to gather data even as their hands remain free.

Easiest To Implement:

Consider Manufacturer Reputation

Buyers of ruggedized equipment should pay attention to something that is seemingly simple to verify but easy to overlook: the reputation of the manufacturer. According to Jim Vercruyssen, senior product manager at General Dynamics Itronix (www.gd-itronix.com), knowing that a hardware manufacturer will be around to support the devices it sells is extremely important because rugged equipment has a longer life span than conventional equipment. A minimum three-year warranty and five-year service life are the industry norm for rugged computers.

Rugged equipment, says Vercruyssen, should have an IEC 60529 rating of IP54. This is a standard rating for water and dust intrusion, where the first digit is for water, and the second is for dust. The higher the rating, the more resistant the device.

Motorola's Safir says ruggedized equipment is tested to see how effective the seal around the device is against intrusion by foreign bodies such as tools, dust, and moisture. Device ruggedness, Safir adds, is indicated by its Ingress Protection code, which is the letters "IP" followed by two or three digits, indicating how durable the device is against elements such as water and dust.

"You should also ask about whether the device has a metal or rubber encasement and whether the sides, joints, or exposed areas have been sealed with protective materials," adds Safir. □

BONUS TIPS

■ Take screen brightness into account. Ruggedized computers are often used outside, so daylight-readable screens are a priority, notes Kyp Walls, director of product management for Panasonic (www.panasonic.com). A standard notebook designed for

indoor use is likely to have a display rated at about 300 NIT (a measure of screen brightness), but rugged notebooks need to be significantly higher than this (at least 500 NIT).

■ Make battery life and wireless a priority. Walls

also says that ruggedized computers should have both long battery lives—because they are used in the field for extended periods of time—and wireless capabilities to enable usage in remote locations.



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WHAT'S HAPPENING

Climate Control

Data Aire Provides A Variety Of Solutions For Enterprises Of All Sizes

by Holly Dolezalek

WHETHER A COMPANY has a single server in a small closet or maintains a full-sized data center, two things are true: heat is the enemy, and so is dust. Environmental control has been a concern since the birth of the computer industry, and as companies' server footprints get bigger and denser, their climate control needs get more and more immediate.

Forty years ago, Data Aire (714/876-2848; www.dataaire.com) was one of the companies that realized that ordinary air conditioners and other climate control devices weren't going to cut it for computer environments. In the mid-1960s, Data Aire began making precision air control systems, which were more sophisticated and rigorous than ordinary "comfort" systems and addressed the downtime that could result from poor environmental control. In 1979, its parent company, the C/S Group, bought it as a wholly owned subsidiary; then, in 2000, the company moved to Orange, Calif. Its primary products are for environmental control, including temperature, humidity, and airborne particulate matter, in computer rooms and data centers.

Something For Everyone

Because computers have become so omnipresent in today's business, a company that addresses computer needs has a wide base of customers to draw from. Data Aire is agnostic on size and industry, providing systems to every market segment from manufacturing to financial services and to every size of enterprise.

Its air processors come in ceiling-mounted and floor-mounted versions and use air,

chilled water, or a mixture of water and glycol for cooling. "We sell products that can provide 1 ton of cooling or 50 tons," says Duncan Moffat, president of Data Aire. The company also sells heat exchangers with aluminum housing and fans, including high-capacity outdoor and indoor fluid coolers and condensers.

Data Aire's system controls help users monitor their air-processing units. For example, its Data Alarm Processor controls temperature, humidity, airflow, and cleanliness but also tracks the run times and alarm history of each air-processing component. The Mini Data Alarm Processor II has seven-day programming for low-demand periods.

Market Realities

Data Aire, like a lot of companies, grew a great deal during the dot-com era. And like a lot of companies, Moffat admits, that growth was false, or at least not sustainable. Customers who bought units in one year were out of the business the next and weren't around to upgrade or expand. But since the dot-com bubble burst, Data Aire has seen a quiet, yet more real, growth. "We've increased our business three to four times since that era, and it's real in that it's more sustainable," Moffat says. "We sell a pretty even number of units across our product lines."

The company sells its units primarily in the United States, but with the value of the dollar making pricing attractive overseas, Data Aire is expanding its sales slowly in the international realm. "It's still scattered, but we do a lot of business in Latin America, Southeast Asia, and the Middle East," Moffat says.

Business is distributed evenly between new customers and previous customers that are expanding their facilities or adding new ones.

Apart from the standard models Data Aire manufactures, a big part of the company's business is its custom models. "We don't just bang out catalog business week after week, and so we tailor our manufacturing accordingly," Moffat explains. The company frequently manufactures units with modified cabinet size, configuration,



and coil size; variable numbers or types of fans, flow patterns, or capacity; and, occasionally, split frames, which are units that are split in two so that the user can fit the unit into a tight corner and reassemble it.

Data Aire's manufacturing facilities are also in Orange, which lets the company meet some tight turnaround times. That's both good and necessary, Moffat explains, because tight turnaround times are part of the industry. "Our customers often want the product pretty quickly after they decide to buy, and it's often a sizable buy that they need yesterday," he says.

The usual lead time is four weeks, Moffat says, but Data Aire makes a two-week turnaround time available, and its premium program promises delivery in just a few days.

"We think our lead times are shorter than anybody else's in the industry," he says.

Going Green

Like most growing companies, Data Aire has to find talented new employees, get them trained, and upgrade its processes or systems to accommodate its growth. But its real challenge is that the heating and cooling industry is a big consumer of power, and as computer technology gets smaller and faster, it also gets hotter faster. Thus, climate control devices will soon need to be greener than they used to be.

"The heat loads in the server rooms we serve are getting more and more dense and compact, which means that we have to provide more cooling capacity, but we also have to offer products for hot spots," Moffat says. The company is putting a lot of R&D money into engineering new solutions for hot spots.

But it isn't just power that matters. Cooling requires refrigerants, and refrigerants have had a history of being hard on the ozone layer. For example, the industry phased out CFCs (chlorofluorocarbons) in 1996 because their chlorine components broke down too much ozone. HCFCs (hydrochlorofluorocarbons) such as R-22—a frequently used refrigerant—are less damaging, but R-22 is a greenhouse gas by itself, and its manufacture creates another greenhouse gas.

"We definitely need to move forward with [alternative], more environmentally friendly refrigerants," Moffat says.

A Good Place To Be

Although the climate control industry is a competitive one, Moffat says that it's also a good one, because the electronic technology that runs business all over the world has to be dealt with in a certain way—that is, in terms of climate. That fact makes Data Aire's products nearly recession-proof.

"I cross my fingers as I say that, but even with what's going on on Wall Street, the computer equipment has to run in the downturn just like it did in the boom years," Moffat says. "It's a good niche because companies have to invest in their infrastructure; it's the last thing to go before they turn the lights out." P

THREE QUESTIONS

Reduce Your Dependence On Tape

Data Domain Products Focus On Complementing Existing Backup Tools

by George Crump

BASED IN SANTA CLARA, CALIF., Data Domain makes products that leverage data deduplication, helping customers reduce their dependency on tape.

Although Data Domain (www.datadomain.com) is not the first into the data deduplication market, by focusing on a solution that complements the existing backup software, as opposed to competing with it, Data Domain has become one of the market leaders. Today, in addition to the backup market, Data Domain also offers solutions for optimization of nearline data.

Hugo Patterson joined Data Domain in March 2002 and has served as its chief architect

since May 2002. Prior to joining Data Domain, Patterson was the lead architect for data availability and management at NetApp.

■ What are the biggest IT-related issues facing today's small to midsized enterprise?

"All companies, especially the small to medium-sized enterprise, are trying to do more with less," says Patterson. The news of the past couple of months has only made matters worse, but no one has told the data, he says.

"SMEs have to handle the growing size of data with less manpower," he says. Patterson believes that the key issue in the context

clearly becomes data protection. The data protection process has a history of being expensive to acquire and maintain while being labor-intensive and creating uncertain results.

"SMEs are constantly under pressure to do more, but they simply don't have the resources to pull it off," he says.

■ What should Processor readers know about your company's products?

"Data Domain produces data deduplication systems that, from the start, were designed to reduce the use of tape for backup and, now, archive applications," says Patterson.

For almost 50 years, people have been using tape as the primary medium of backup, and that is changing. Patterson uses the example that people used to listen to cassette tapes, but now they listen to MP3 players, and the key enabler was the MP3 format. Yet another example is that people used to watch VHS and now can use DVD because of video compression.

In similar fashion, Data Domain was an early pioneer of data deduplication, the key enabler of the move from tape-based backups to disk-based backups. Data deduplication can greatly reduce the footprint of backups—especially full backups, where it is common to get a factor

of 50x storage efficiency as a result of data deduplication.

The Data Domain Appliance slides right into the backup infrastructure where tape is today, Patterson says. It uses standard NAS and VTL interfaces or can use the NetBackup Open-Storage plug-in. All of this deduplication sophistication comes with no loss of recovery performance. Patterson says that recovery performance with Data Domain's solutions is typically much better than tape.

■ What makes your company unique?

Patterson believes Data Domain is unique because it was the only company conceived from the start as a disk-based data protection company. Most other manufacturers in the space started as a primary storage solution, while Data Domain was focused on building storage systems as a data protection solution.

"We were also one of the few that started with dedupe as a core tenet of our first solution and are the only one that remains as a standalone publicly traded company," Patterson says.

"We are now a leader in the data deduplication and data protection spaces," he says. "We are on our fourth-generation product; it is proven and polished. Many of our competitors are still dealing with 1.0 issues—issues that we resolved many years ago."

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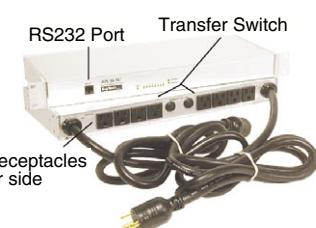
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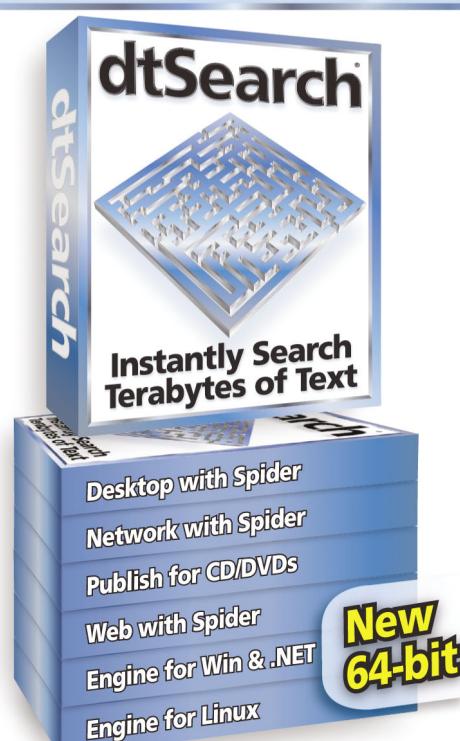
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